

Department of Transportation  
Federal Aviation Administration  
**ENGINEERING SERVICES, ENROUTE**

**FAA-GL-2983**  
*Specification For*  
**ZMP – Mold Remediation**  
**Minneapolis ARTCC**  
**Farmington, MN**

*April 20, 2012*

Submitted By:

Engineering Services, Enroute Construction/Installation, Central Service Area

**1.0 WORK SUMMARY.** Provide labor, materials, services, equipment, and insurance to remove and dispose of all microbiological contaminated materials (**MCM**) and microbiological contaminated elements (**MCE**) in various locations, in accordance with this specification and the guidelines established by the New York City Department of Health entitled *Guidelines on Assessment and Remediation of Fungi in Indoor Environments (GARFIE)* (See Attachment 2). Included in the scope of work is the removal of any MCM/MCE in a concrete trench, between the bottom metal runner/track and the concrete floor, and between the metal stud and exterior concrete wall, in areas shown in **Attachment**. Upon mold removal, provide stud wall, replacement sheetrock with inorganic backing, tape/finish/paint, floor tile, and other items in specified areas. In other specified areas, clean debris and efflorescence, repair plaster, paint and seal the area. A complete list of the work required is included in Section 7.0.

**1.1. CONTRACTOR'S RESPONSIBILITY.** Perform all work required to give a complete and satisfactory job as required by this specification. Perform the work in accordance with GARFIE. Remove and properly dispose of all debris generated under this contract at the job site. Provide transport of microbiological containing or contaminated materials to an approved disposal site.

**1.1.1 Site Visit.** Prior to bidding, an inspection of the work is required to verify all quantities for: constructing a negative pressure enclosure for each phase of the work, MCM, MCE removal and disposal, work area physical parameters, access limitations, and phasing limitations. The Contractor is required to work around existing furniture, fixtures and finishes during the performance of this contract.

**1.1.2 Property Damage.** Take all precautions to avoid damage to Government property or equipment. Any damage to Government property or equipment by the Contractor shall be repaired by the Contractor to its original state or better condition at no additional expense to the Government.

**1.1.3 Critical Air Traffic Equipment.** Provide protective covers to switches, cabling, and other FAA equipment prior to any work. Protection includes the temporary installation of solid, sturdy covers capable of withstanding bumps from personnel and material in multiple locations. Submit protective cover plan for approval.

**1.1.4 Working Conditions.** Portions of the ARTCC will be occupied and Government operations will continue on a normal, temporary, or restricted basis for the duration of the project. Take all precautions to ensure that operations are conducted in a manner that does not interfere with the normal operations of the surrounding facilities and the safety and health of the occupants or the environment. Contractor's personnel will have limited access to the facility.

**1.1.5 Cleanup.** Upon completion of the work at the site, all staging and debris from the project shall be removed from the site and disposed of properly. The entire area shall be left clean and acceptable to the Government.

- 1.1.6 Working Hours.** Work performed in Rooms B120 (Comm) and B134 (Host) must be completed at night, 10pm-6am, or as approved by the COR. Work in all other areas may be performed during normal business hours 0700-1330.
- 1.2. PRE-CONSTRUCTION MEETING.** Attend a mandatory pre-construction meeting before starting work and the contracting officer will schedule the meeting.
- 1.3. TEMPORARY FACILITIES AND STAGING AREA.** The electrical energy and the water consumed shall be provided by the facility at no cost from existing lines and sources located in the ARTCC or from services adjacent to the work areas. The use of utilities shall be coordinated with the resident engineer. Areas will be provided outside the building as directed by the resident engineer for staging and storage of materials. The area is restricted to uncontaminated work equipment and supplies. The area shall be left clean and restored to the same condition as when accepted by the Contractor.
- 1.4. EQUIPMENT.** Air filtration and vacuum equipment must be provided with High Efficiency Particulate Air (HEPA) filtration, capable of trapping 99.97 percent of all particulate larger than 0.3 microns. All equipment to be provided from inventories specific to mold remediation, and must be thoroughly cleaned prior to entering facility. Equipment will be inspected upon arrival for cleanliness. Filters must be new. Equipment must be exhausted to the exterior of the building.
- 1.5. SUBMITTAL REQUIREMENTS.** Submit the following documents prior to starting work:
- Material Safety Data Sheets for all chemical products.
  - Respiratory Fit Test and Medical Surveillance for employees scheduled for the use of respiratory protection for this project.
  - Proposed Phasing Schedule/Sequencing Plan
  - Enclosure Layouts
  - Protective Cover Plan
- 2.0 MEDICAL REQUIREMENTS.** Provide medical surveillance and have a written Respiratory Protection program in place as required by OSHA 29 CFR 1910.134 for all personnel engaged in the removal and demolition of MCM and MCE. Half or full face respirators and filters provided shall be NIOSH approved and provide the appropriate level of protection.
- 3.0 PROTECTIVE CLOTHING.** Provide workers and resident engineer with sufficient sets of protective full body clothing. Such clothing shall consist of full body coveralls including head covers, foot covers and hand covers. Provide additional personal protection safety equipment as required by applicable OSHA safety regulations. Ensure that all employees who will conduct mold remediation activities are provided with, fit tested for, and trained in the correct use of personal protection equipment.
- 4.0 REMEDIATION AREA.** Establish a remediation area and ensure adjoining areas are not exposed to the microbial contamination during the remediation. Establish a roped-off perimeter and provide warning barrier tape and signs outside the perimeter of the enclosure system. Establish an exhausted enclosure system by sealing all critical penetrations or openings to the

work area with a minimum of two layers of six-mil polyethylene. Enclosure must include the area to be remediated, plus enough additional area to allow for all equipment and work activities. In some areas, temporary plywood templates may need to be installed under the raised floor to protect the enclosure from the pressurized external air. Positive pressure must be maintained, outside of the enclosure, inside of the raised floor to maintain equipment temperatures. Exhausted enclosures shall have a minimum of four air exchanges per hour and shall be maintained throughout the duration of the work until clearance results are accepted by the resident engineer. Personnel shall wear and utilize protective clothing and equipment in the remediation area as specified herein. Contractor will allow access to enclosure by facility maintenance personnel throughout project.

**5.0 DECONTAMINATION AREA.** Establish a decontamination unit for passage to and from the work area during remediation operations in order to minimize the leakage of mold-contaminated dust to the outside. This unit shall consist of a minimum of two chambers, including a clean room and equipment room separated by airlocks. The airlocks shall be formed by overlapping three sheets of 6-mil polyethylene sheeting at the exit of one room and three sheets at the entrance to the next room, with three feet of space between the barriers. Airlocks shall be constructed to effectively maintain exhaust while not inhibiting worker egress in an emergency situation.

## **6.0 WORKER PROTECTION PROCEDURE.**

- 6.1.** Each worker and authorized visitor shall, upon entering the job site, put on appropriate respirator and clean protective clothing, before entering the work area.
- 6.2.** Each worker and authorized visitor shall remove gross contamination from clothing by HEPA vacuuming, prior to leaving the remediation work area. After decontamination of protective clothing, while still wearing the respirator, remove protective clothing and dispose as microbiological waste, as appropriate, in a drum or two layers of 6-mil polyethylene disposal bags.
- 6.3.** Workers shall not eat, drink, smoke, or chew gum or tobacco at the work site. Workers shall be fully protected with respirators and protective clothing immediately prior to the first disturbance of MCM or MCE and until final cleanup is completed.

## **7.0 WORK PROCEDURE.**

- 7.1** Establish phasing schedule with the resident engineer for each days work activity. HEPA-vacuum and/or wet wipe with a detergent solution all non-porous furniture and fixtures. Remove any furnishings from the remediation area, after it has been pre-cleaned. Upon completion, return the furnishings to the original location. If necessary, furnishings can be pre-cleaned and wrapped with two layers of 6-mil polyethylene and allowed to remain in the remediation area. Electrical equipment that poses an electrical hazard shall be HEPA vacuumed only.
- 7.2** N/A
- 7.3** Removal limits shall coincide with existing metal studs at or beyond the limits identified below. Joints between sheetrock on the surface and concealed layer shall be staggered horizontally and vertically, unless limits are the entire wall and less than the

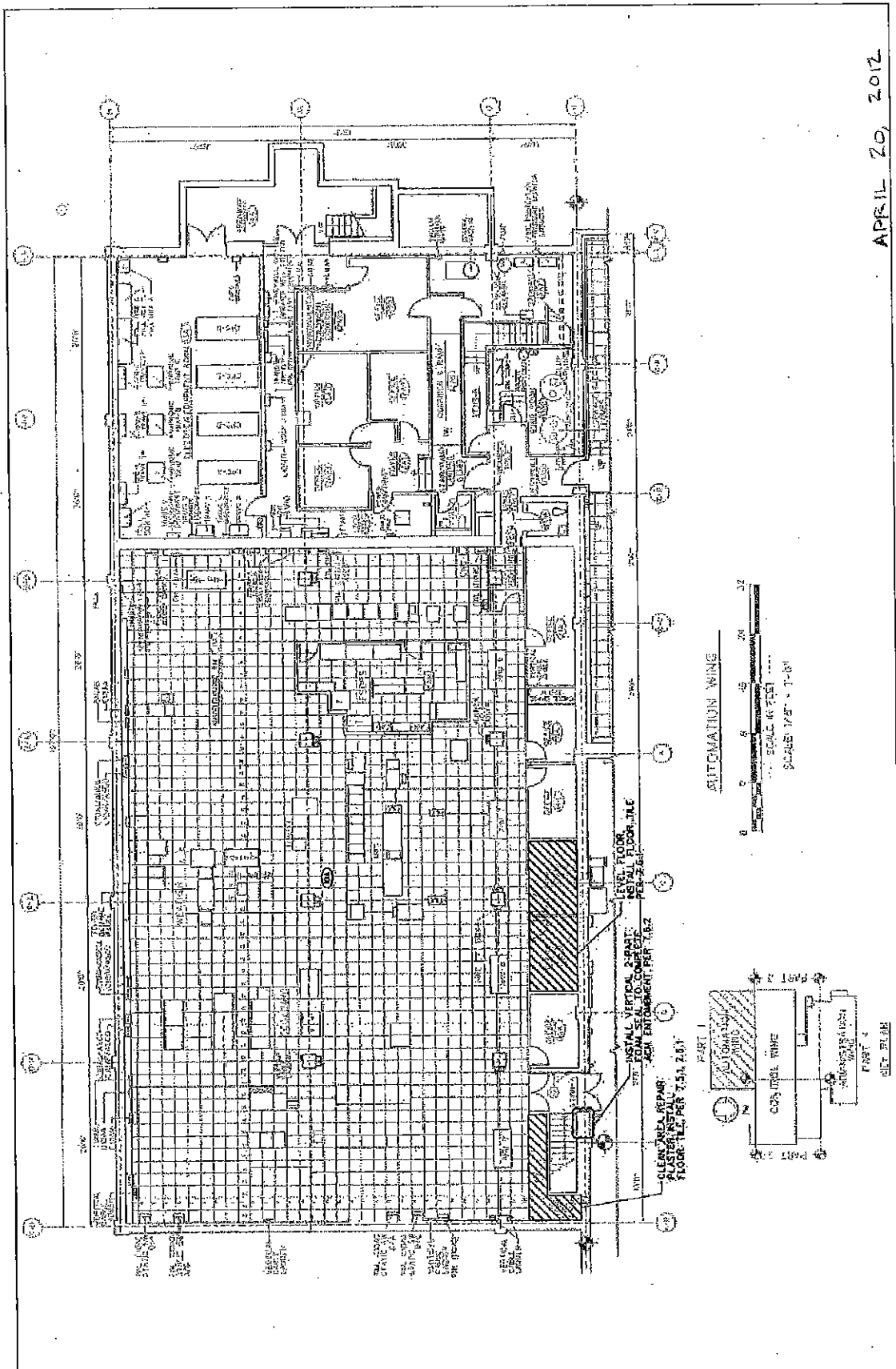
length of sheetrock utilized. Demolition work shall be conducted utilizing methods to minimize noise and the spread of dust, such as the use of HEPA vacuums at the point of cutting and/or tools with shrouds or boots connected to a HEPA vacuum. The remediation locations and areas **requiring exhausted enclosures and clearances** are shown on attached drawings and are summarized as follows:

- 7.3.1 Remove the lower one foot of sheetrock and insulation of the wall system below the raised floor along approximately 71 linear feet of the south wall of Room B120.
  - 7.3.2 Remove the lower one foot of sheetrock and insulation of the wall system below the raised floor along the entire (approximately 56 linear feet) east wall of Room B120.
  - 7.3.3 Remove the lower two feet of the entire (approximately 10 linear feet) east wall of Stair No. 3.
  - 7.3.4 Remove the lower one foot of the north wall of Room B134, extending approximately 3 feet eastward from the Room B134D wall.
  - 7.3.5 Remove the lower one foot of the north wall of Room B134D, extending approximately 3 feet westward from the northeast corner of the room.
  - 7.3.6 Clean, sanitize, and dry the floor trench (approximately 465 square feet of surface) in Room B134. **Area must be done in at least two phases, each requiring separate enclosures and clearances, to reduce the impact of the enclosure blocking the cooling air flow to critical equipment.**
  - 7.3.7 Remove the lower six feet of both sides (approximately 12 linear feet per side) of the entire dividing wall in Vestibule B118.
- 7.4 Install replacement sheetrock with non-organic backing and resistant to microbial growth. All sheetrock shall be installed with at least ½ inch clearance between the sheetrock and the floor. Provide taping, mudding, and interior paint finish (match existing to nearest corner), if applicable, to sheetrock. Provide fire-rated caulking to penetrations through new sheetrock. Final clearance testing of these areas must be passed before sheetrock installation can begin. Installation locations and areas are shown on drawings, and are summarized as follows:
- 7.4.1 The central 71 linear feet of the south wall of Room B120 (approximately 71 square feet in area).
  - 7.4.2 The south 56 linear feet of the east wall of Room B120 (approximately 56 square feet in area).
  - 7.4.3 The east wall, 10 linear feet, of Stair 3 (approximately 20 square feet in area).
  - 7.4.4 The north wall, 6 linear feet, of B134 & B134D (approximately 6 square feet in area).

- 7.4.5 The west wall, 12 linear feet, of B118 both sides (approximately 144 square feet in the area).
- 7.4.6 The east wall of Room B115 (approximately 160 square feet). Prior to sheetrock installation, provide stud wall extending to within 3-inches of floor, anchored to wall. Provide stud along base and finish to match wall.
- 7.5 Clean efflorescence salts and staining from affected areas of concrete or plaster walls. Affected areas shall be neutralized with a low-odor efflorescence cleaning agent, according to the manufacturer's instructions. Contractor shall be prepared to perform physical removal (e. g. wire brushing) only, if cleaning agent odors prove unacceptable to building occupants. After cleaning and removal, repair any damaged plaster and seal the area with an approved, low-odor primer and interior paint, matching adjacent area to nearest corners. Areas below **do not require an exhausted enclosure**; however, a poly drop cloth shall be placed below the work to catch all debris generated. Affected areas are shown on drawings, and are summarized as follows:
  - 7.5.1 The north wall in the northeast corner of Room 10A (approximately 4 linear feet of wall).
  - 7.5.2 The south wall of Room B101E (approximately 20 linear feet of wall).
  - 7.5.3 The west wall of Room B112 (approximately 13 linear feet of wall).
  - 7.5.4 The east wall of Room B115 (approximately 40 linear feet of wall).
  - 7.5.5 The east wall of Room B117 (approximately 24 linear feet of wall).
  - 7.5.6 The east wall of Room B118, (approximately 13 linear feet of wall).
- 7.6 Provide additional restoration as listed below;
  - 7.6.1 Level floor and install vinyl floor tile and base to concrete floor adjacent to corner, and rooms 16A, 17A, approximately 275 S.F. total. Provide prep work, leveling, labor, adhesive, and incidental materials (tile and base will be provided from local stock) to finish the floor.
  - 7.6.2 Provide vertical 2-part foam seal to complete ACM entombment. Furnish and install 2-part foam and backer, as necessary, to provide a seal as identified on the drawings. The seal must make an airtight closure from the ceiling "deck" to the fire-rated door enclosure.
- 7.7 Place MCM and MCE in a fiber/cardboard type drum or two layers of 6-mil polyethylene disposal bags with contents clearly labeled. At completion of each phase, notify the resident engineer of completion so that resident engineer can perform a visual inspection of the work area.
- 7.8 Upon approval of resident engineer, remove barriers and disassemble regulated work area. Additional cleaning required in the work area because of the resident engineer inspection shall be performed by Contractor, at no additional cost to the Government.

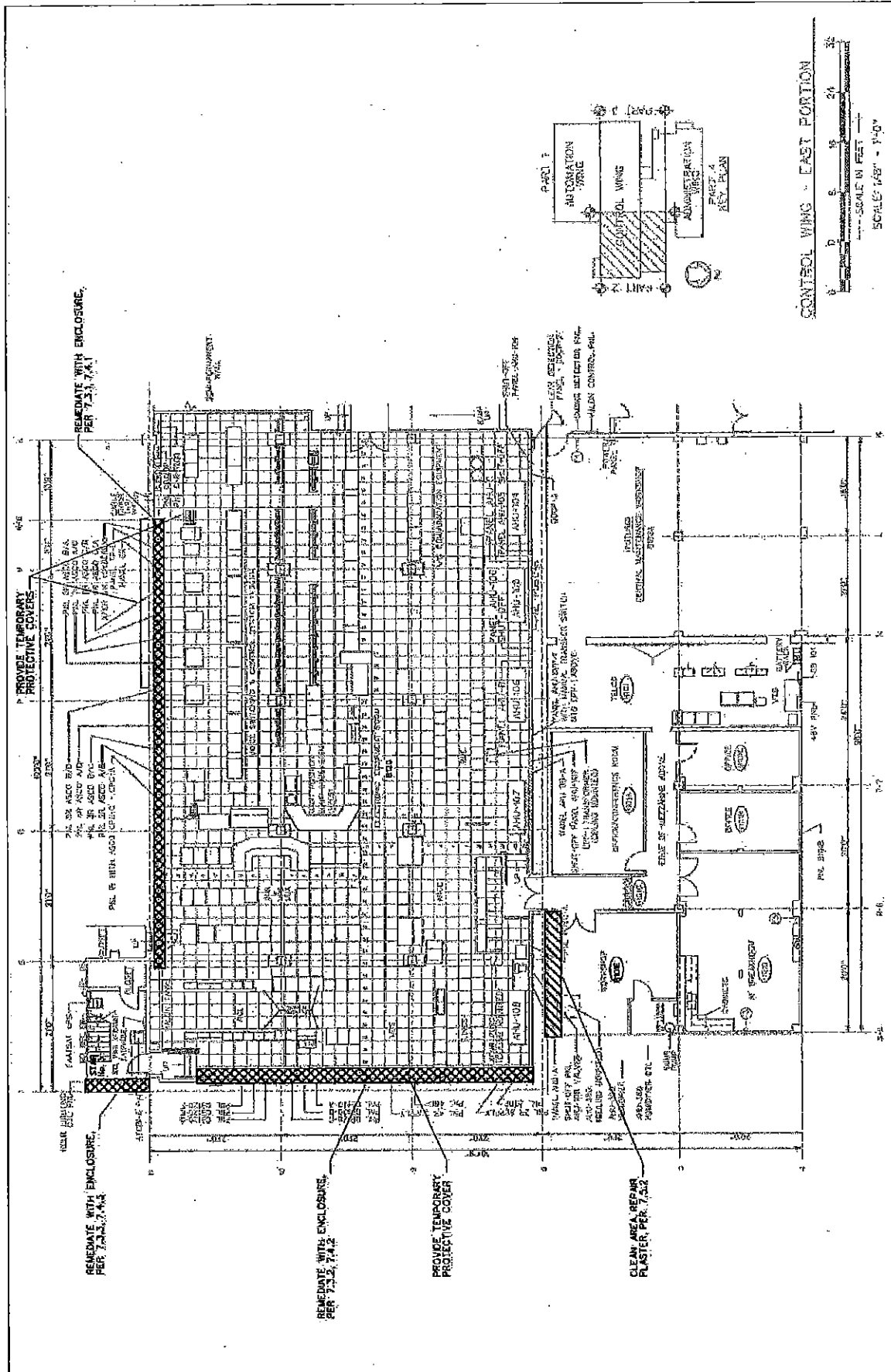
- 8 AIR SAMPLES AND INSPECTION.** Air sampling for clearance and visual inspection of the work will be conducted **by others**. The government will retain a third-party contractor to provide air sampling, testing, and inspection. Procedural modifications to the decontamination procedures may be necessary at the discretion of the Government-retained Industrial Hygienist, by direction from the COR. The Industrial Hygienist has the right to inspect the remediation work at times to be determined by the resident engineer, but, at a minimum, once upon completed removal of contaminated materials, but before new sheetrock is installed. The air sampling contractor has the right to the work areas to conduct air sampling.
- 9 FINAL CLEARANCE.** Acceptance of work will be dependent upon visual inspection and clearance air sampling and/or tape lift sampling. Provide advance notice to the resident engineer when the microbiological removal is completed for each phase and the Government-retained Industrial Hygienist shall perform a thorough visual inspection of the phase within 24-hours. Clearance sampling shall be performed following the requirements stipulated in the ARTCC Mold Remediation Clearance Protocol (MRCP) (See **Attachment**). Floor trench cleaning shall be cleared by visual inspection, clearance air sampling and tape lift sampling following the MRCP. The tape lift samples will be collected per **Attachment**. The work of **Sections 7.5** will be cleared by visual inspection.
- 10 DISPOSAL.** All microbiological waste shall be disposed of at a municipal sanitary landfill (CND). Waste bags shall not be overloaded and shall be securely sealed and stored in the designated area until disposal. Label bags, disposal containers, and truck during loading and unloading, in accordance with Federal, State and Local regulations. Contractor is responsible for removal of all materials from the Government's property.

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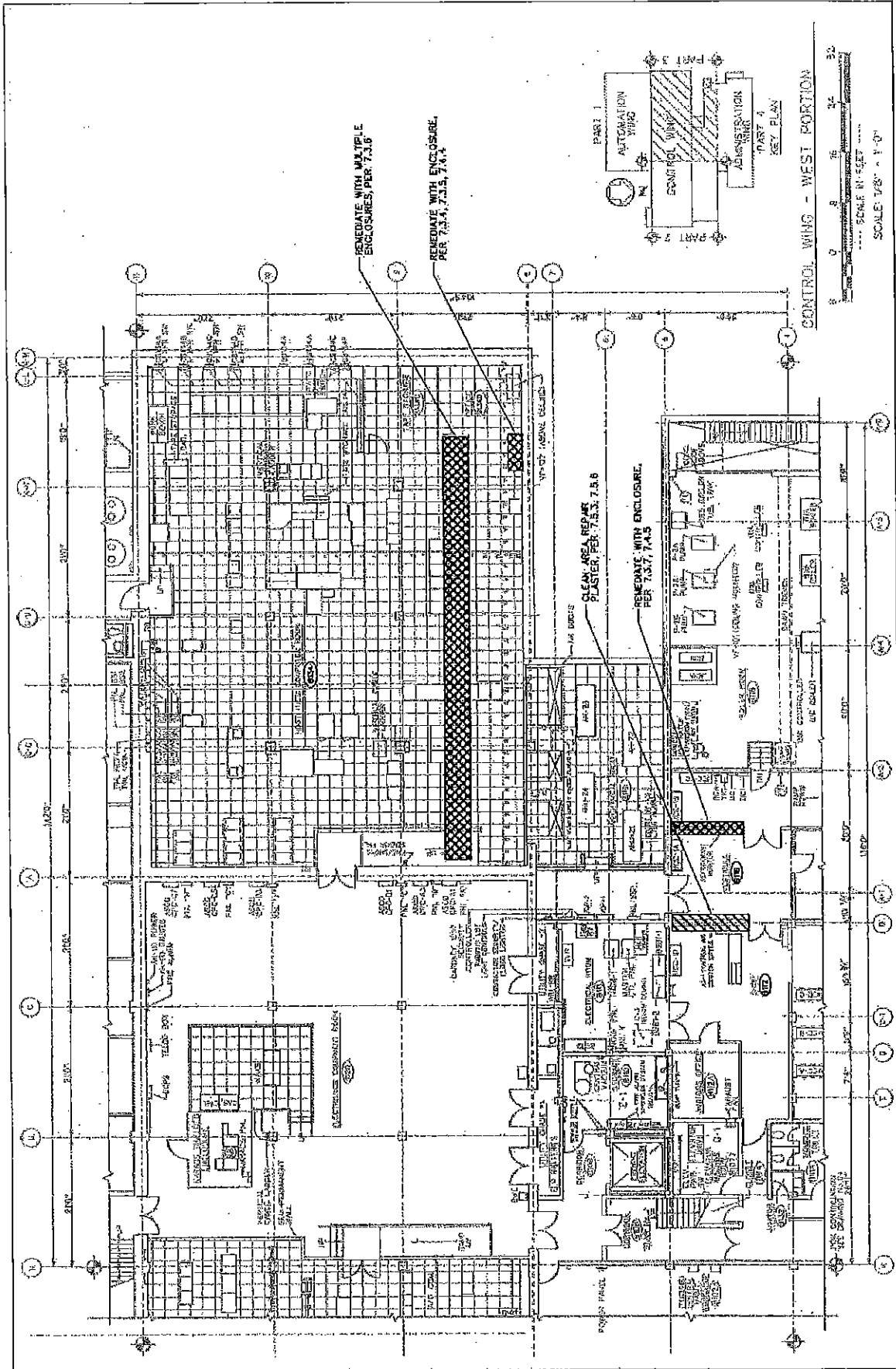


## DRAWING 2

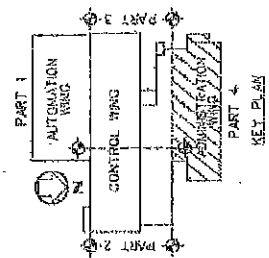


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# DRAWING 3



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## **ATTACHMENT 2**

### **New York City Department of Health Guidelines on Assessment and Remediation of Fungi in Indoor Environments (GARFIE)**

**Guidelines**  
**on**  
**Assessment and Remediation of Fungi in Indoor Environments**

**New York City Department of Health and Mental Hygiene**

**November 2008**

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## Preface

This 2008 document revises existing guidelines and supersedes all prior editions. It is based both on a review of the current literature regarding fungi (mold) and on comments from a review panel consisting of experts in the fields of mycology/microbiology, environmental health sciences, environmental/occupational medicine, industrial hygiene, and environmental remediation.

These guidelines are intended for use by building owners and managers, environmental contractors and environmental consultants. It is also available for general distribution to anyone concerned about indoor mold growth. The attached fact sheet, "*Mold Growth: Prevention and Cleanup for Building Owners and Managers*," is a simplified summary of these guidelines, which may be useful for building owners, managers and workers. It is strongly recommended that the complete guidelines be referred to before addressing the assessment or remediation of indoor mold growth.

In 1993, the New York City Department of Health and Mental Hygiene (DOHMH) first issued recommendations on addressing mold growth indoors. In 2000, DOHMH made major revisions to the initial guidance and made minor edits in 2002.

The terms *fungi* and *mold* are used interchangeably throughout this document.

This document should be used only as guidance. It is not a substitute for a site-specific assessment and remediation plan and is not intended for use in critical care facilities such as intensive care units, transplant units, or surgical suites. Currently there are no United States Federal, New York State, or New York City regulations for the assessment or remediation of mold growth.

These guidelines are available to the public, but may not be reprinted or used for any commercial purpose except with the express written permission of the DOHMH. These guidelines are subject to change as more information regarding this topic becomes available.

The New York City Department of Health and Mental Hygiene would like to thank the following individuals and organizations for participating in the revision of these guidelines. Please note that these guidelines do not necessarily reflect the opinions of the participants or their organizations.

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We would also like to thank the many others who offered opinions, comments, and assistance at various stages during the development of these guidelines.

These guidelines were prepared by the Environmental and Occupational Disease Epidemiology Unit of the New York City Department of Health and Mental Hygiene. This document, and any future revisions, is available online at [nyc.gov/health](http://nyc.gov/health). For further information please call 311 or (212) NEW-YORK (from outside the City).

November 2009



## Introduction

Fungi (mold) are present almost everywhere. In an indoor environment hundreds of different kinds of mold are able to grow wherever there is moisture and an organic substrate (food source). They can grow on building and other materials, including: the paper on gypsum wallboard (drywall); ceiling tiles; wood products; paint; wallpaper; carpeting; some furnishings; books/papers; clothes; and other fabrics. Mold can also grow on moist, dirty surfaces such as concrete, fiberglass insulation, and ceramic tiles. It is neither possible nor warranted to eliminate the presence of all indoor fungal spores and fragments; however, mold growth indoors can and should be prevented and removed if present.

The purpose of these guidelines is to provide an approach to address potential and observed mold growth on structural materials in commercial, school, and residential buildings. Mold growth in critical care areas of health-care facilities such as intensive care units or surgery suites may pose significant health concerns to patients. This document is not intended for such situations. Please visit the US Centers for Disease Control and Prevention (CDC) at [www.cdc.gov](http://www.cdc.gov) for more information on dealing with mold growth and its cleanup in health-care facilities.<sup>1</sup> Mold on bathroom tile grout, in shower stalls, and on bathtubs is a common occurrence. Occupants can control this growth through frequent use of household cleaners.

Water accumulation in indoor environments can lead to mold growth (and other environmental problems), which has been associated with human health effects (see *Appendix A*).<sup>2-6</sup> Indoor mold growth can be prevented or minimized, however, by actively maintaining, inspecting, and correcting buildings for moisture problems and immediately drying and managing water-damaged materials. In the event that mold growth does occur, this guide is intended to assist those responsible for maintaining facilities in evaluating and correcting this problem.

Removing mold growth and correcting the underlying cause of water accumulation can help to reduce mold exposures and related health symptoms.<sup>7,8</sup> Prompt remediation of mold-damaged materials and infrastructure repair should be the primary response to mold growth in buildings. The simplest, most expedient remediation that properly and safely removes mold growth from buildings should be used. Extensive mold growth poses more difficult problems that should be addressed on a case-by-case basis in consultation with an appropriate building or environmental health professional. In all situations, the source of water must be identified and corrected or the mold growth will recur.

Effective communication with building occupants is an important component of all remedial efforts. Individuals who believe they have mold-related health problems should see their physicians. Individuals who may have an occupationally related illness should be referred to an occupational/environmental physician for evaluation, following any needed initial care. Clinic contact information is available from the New York State Department of Health at [www.health.state.ny.us/environmental/workplace/clinic\\_network](http://www.health.state.ny.us/environmental/workplace/clinic_network).

## Environmental Assessment

The presence of mold growth, water damage, or musty odors should be addressed quickly. In all instances, any sources of water must be identified and corrected and the extent of water damage and any mold growth determined. Water-damaged materials should be removed or cleaned and dried. For additional information on cleaning water-damaged materials and personal belongings, refer to the EPA document "Mold Remediation in Schools and Commercial Buildings."<sup>9</sup>

A trained building or environmental health professional may be helpful in assessing the extent of the moisture problem and mold growth and developing a site-specific work plan. The presence of a trained professional to provide oversight during remediation can also be helpful to ensure quality work and compliance with the work plan. According to the American Industrial Hygiene Association a trained professional should have, at a minimum, a relevant science or engineering degree and two years of full-time supervised experience in mold assessment.<sup>10</sup>

## Visual Inspection

A visual inspection is the most important initial step in identifying a possible mold problem and in determining remedial strategies. The extent of any water damage and mold growth should be visually assessed and the affected building materials identified. A visual inspection should also include observations of hidden areas where damages may be present, such as crawl spaces, attics, and behind wallboard. Carpet backing and padding, wallpaper, moldings (*e.g.* baseboards), insulation and other materials that are suspected of hiding mold growth should also be assessed.

Ceiling tiles, paper-covered gypsum wallboard (drywall), structural wood, and other cellulose-containing surfaces should be given careful attention during a visual inspection. Ventilation systems should be visually checked for damp conditions and/or mold growth on system components such as filters, insulation, and coils/fins, as well as for overall cleanliness.

Equipment such as a moisture meter or infrared camera (to detect moisture in building materials) or a borescope (to view spaces in ductwork or behind walls) may be helpful in identifying hidden sources of mold growth, the extent of water damage, and in determining if the water source is active.

Using personal protective equipment such as gloves and respiratory protection (*e.g.* N-95 disposable respirator) should be considered if assessment work might disturb mold. Efforts should also be made to minimize the generation and migration of any dust and mold.

## Environmental Sampling

Environmental sampling is **not** usually necessary to proceed with remediation of visually identified mold growth or water-damaged materials. Decisions about appropriate remediation strategies can generally be made on the basis of a thorough visual inspection. Environmental sampling may be helpful in some cases, such as, to confirm the presence of visually identified

mold or if the source of perceived indoor mold growth cannot be visually identified.

If environmental samples will be collected, a sampling plan should be developed that includes a clear purpose, sampling strategy, and addresses the interpretation of results.<sup>11,12</sup> Many types of sampling can be performed (e.g. air, surface, dust, and bulk materials) on a variety of fungal components and metabolites, using diverse sampling methodologies. Sampling methods for fungi are not well standardized, however, and may yield highly variable results that can be difficult to interpret.<sup>11-17</sup> Currently, there are no standards, or clear and widely accepted guidelines with which to compare results for health or environmental assessments.

Environmental sampling should be conducted by an individual who is trained in the appropriate sampling methods and is aware of the limitations of the methods used. Using a laboratory that specializes in environmental mycology is also recommended. The laboratory should be accredited in microbiology by an independent and reputable certifying organization.

For additional information on sampling, refer to the American Conference of Governmental Industrial Hygienists' publication, "Bioaerosols: Assessment and Control" and the American Industrial Hygiene Association's "Field Guide for the Determination of Biological Contaminants in Environmental Samples."<sup>11,18</sup>

## **Remediation**

**The goal of remediation is to remove or clean mold-damaged materials using work practices that protect occupants by controlling the dispersion of mold from the work area and protect remediation workers from exposures to mold.** The listed remediation methods were designed to achieve this goal; however, they are not meant to exclude other similarly effective methods and are not a substitute for a site-specific work plan. Since little scientific information exists that evaluates the effectiveness and best practices for mold remediation, these guidelines are based on principles used to remediate common indoor environmental hazards. These guidelines are not intended for use in critical care facilities such as intensive care units, transplant units, or surgical suites.

Prior to any remediation, consideration must be given to the potential presence of other environmental hazards, such as asbestos and lead. These guidelines are based on possible health risks from mold exposure and may be superseded by standard procedures for the remediation of other indoor environmental hazards.

### **Moisture Control and Building Repair**

**In all situations, the underlying moisture problem must be corrected to prevent recurring mold growth.** Indoor moisture can result from numerous causes, such as: façade and roof leaks; plumbing leaks; floods; condensation; and high relative humidity. An appropriate building expert may be needed to identify and repair building problems. An immediate response

and thorough cleaning, drying, and/or removal of water-damaged materials will prevent or limit microbial growth.

Relative humidity should generally be maintained at levels below 65% to inhibit mold growth.<sup>19</sup> Short-term periods of higher humidity would not be expected to result in mold growth.<sup>20</sup> However, condensation on cold surfaces could result in water accumulation at much lower relative humidity levels. Relative humidity should be kept low enough to prevent condensation on windows and other surfaces.

Emphasis should be placed on ensuring proper repairs of the building infrastructure so that water intrusion and moisture accumulation is stopped and does not recur.

### **Worker Training**

Proper training of workers is critical in successfully and safely remediating mold growth.<sup>21,22</sup> Training topics that should be addressed include:

- Causes of moisture intrusion and mold growth
- Health concerns related to mold exposure
- The use of appropriate personal protective equipment
- Mold remediation work practices, procedures, and methods

For additional information, the National Institute of Environmental Health Sciences' publication, "Guidelines for the Protection and Training of Workers Engaged in Maintenance and Remediation Work Associated with Mold" lists minimum training criteria for building maintenance and mold remediation workers that should be completed before addressing indoor mold growth.<sup>23</sup>

Trained building maintenance staff can address limited and occasional mold growth. For larger jobs, more extensively trained mold remediation workers may be needed.

### **Cleaning Methods**

Non-porous materials (e.g. metals, glass, and hard plastics) can almost always be cleaned. Semi-porous and porous structural materials, such as wood and concrete can be cleaned if they are structurally sound. Porous materials, such as ceiling tiles and insulation, and wallboards (with more than a small area of mold growth) should be removed and discarded. Wallboard should be cleaned or removed at least six inches beyond visually assessed mold growth (including hidden areas, see *Visual Inspection*) or wet or water-damaged areas.<sup>24</sup> A professional restoration consultant should be contacted to restore valuable items that have been damaged.

Cleaning should be done using a soap or detergent solution. Use the gentlest cleaning method that effectively removes the mold to limit dust generation. All materials to be reused should be dry and visibly free from mold. Consideration should also be given to cleaning surfaces and materials adjacent to areas of mold growth for settled spores and fungal fragments. A vacuum

equipped with a High-Efficiency Particulate Air (HEPA) filter could also be used to clean these adjacent areas.

Disinfectants are seldom needed to perform an effective remediation because removal of fungal growth remains the most effective way to prevent exposure. Disinfectant use is recommended when addressing certain specific concerns such as mold growth resulting from sewage waters. If disinfectants are considered necessary, additional measures to protect workers and occupants may also be required. Disinfectants must be registered for use by the United States Environmental Protection Agency (EPA). Any antimicrobial products used in a HVAC system must be EPA-registered specifically for that use.

The use of gaseous, vapor-phase, or aerosolized (*e.g.* fogging) biocides for remedial purposes is **not** recommended. Using biocides in this manner can pose health concerns for people in occupied spaces of the building and for people returning to the treated space. Furthermore, the effectiveness of these treatments is unproven and does not address the possible health concerns from the presence of the remaining non-viable mold.

### **Quality Assurance Indicators**

Measures to ensure the quality and effectiveness of remediation should be undertaken regardless of the project size. Evaluations *during* as well as *after* remediation should be conducted to confirm the effectiveness of remedial work, particularly for large-scale remediation. At minimum, these quality assurance indicators should be followed and documented:

- The underlying moisture problem was identified and eliminated
- Isolation of the work area was appropriate and effective
- Mold removal and worksite cleanup was performed according to the site-specific plan
- Any additional moisture or mold damage discovered during remediation was properly addressed
- Upon completion of remediation, surfaces are free from visible dust and debris.
- If environmental sampling was performed, the results of such sampling were evaluated by a trained building or environmental health professional.<sup>10</sup>

### **Restoring Treated Spaces**

After completing mold remediation and correcting moisture problems, building materials that were removed should be replaced and brought to an intact and finished condition. The use of new building materials that do not promote mold growth should be considered. Anti-microbial paints are usually unnecessary after proper mold remediation. They should not be used in lieu of mold removal and proper moisture control, but may be useful in areas that are reasonably expected to be subject to moisture.

### **Remediation Procedures**

Three different sizes of remediation and the remediation of heating, ventilation, and air-conditioning (HVAC) systems are described below. Currently, existing research does not relate the amount of mold growth to the frequency or severity of health effects. However, as the presence of moldy materials increases, so does the potential for exposure<sup>8</sup> and the need to limit the spread of mold-containing dusts and worker exposures. As such, the size of the area impacted by mold growth as well as practical considerations were used to help define remedial procedures.

Since the following areas were arbitrarily selected, site-specific conditions must be considered in choosing adequate remediation procedures. For more information on the unique characteristics of building types and occupancies that may influence remediation procedures refer to the American Industrial Hygiene Association's publication, "Recognition, Evaluation, and Control of Indoor Mold."<sup>25</sup>

**Small Isolated Areas** (less than 10 square feet) – e.g. ceiling tiles, small areas on walls

(a) Remediation can be conducted by trained building maintenance staff. Such persons should receive training on proper cleaning methods, personal protection, and potential health hazards associated with mold exposure. This training can be performed as part of a program to comply with the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200).

(b) Respiratory protection (e.g., N-95 disposable respirator), in accordance with the OSHA respiratory protection standard (29 CFR 1910.134), is recommended. Gloves and eye protection should also be worn.

(c) The work area should be unoccupied.

(d) If work may impact difficult-to-clean surfaces or items (e.g. carpeting, electronic equipment), the floor of the work area, egress pathways, and other identified materials/belongings should be removed or covered with plastic sheeting and sealed with tape before remediation.

(e) Efforts should be made to reduce dust generation. Dust suppression methods particularly during any cutting or resurfacing of materials are highly recommended. Methods to consider include: cleaning or gently misting surfaces with a dilute soap or detergent solution prior to removal; the use of High-Efficiency Particulate Air (HEPA) vacuum-shrouded tools; or using a vacuum equipped with a HEPA filter at the point of dust generation. Work practices that create excessive dust should be avoided.

(f) Moldy materials that can be cleaned should be cleaned using a soap or detergent solution. Materials that cannot be cleaned should be removed from the building in a sealed plastic bag(s). Plastic sheeting should be discarded after use. There are no special requirements for the disposal of moldy materials.

(g) The work area and areas used by workers for egress should be HEPA-vacuumed (a vacuum equipped with a High-Efficiency Particulate Air filter) or cleaned with a damp cloth and/or mop and a soap or detergent solution.

(h) All areas should be left dry and visibly free from mold, dust, and debris. Check that other quality assurance indicators (see *Quality Insurance Indicators*) have also been met.

#### **Medium-Sized Isolated Areas (10 – 100 square feet)**

(a) Remediation can be conducted by trained building maintenance staff. Such persons should receive training on proper cleaning methods, personal protection, and potential health hazards associated with mold exposure. This training can be performed as part of a program to comply with the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200).

(b) Respiratory protection (e.g., N-95 disposable respirator), in accordance with the OSHA respiratory protection standard (29 CFR 1910.134), is recommended. Gloves and eye protection should also be worn.

(c) The work area should be unoccupied.

(d) Cover the floor, egress pathways, and items left in the work area with plastic sheeting and seal with tape before remediation.

(e) Seal ventilation ducts/grills and other openings in the work area with plastic sheeting. The HVAC system servicing this area may need to be shut down to properly seal vents.

(f) Efforts should be made to reduce dust generation. Dust suppression methods particularly during any cutting or resurfacing of materials are highly recommended. Methods to consider include: cleaning or gently misting surfaces with a dilute soap or detergent solution prior to removal; the use of High-Efficiency Particulate Air (HEPA) vacuum-shrouded tools; or using a vacuum equipped with a HEPA filter at the point of dust generation. Work practices that create excessive dust should be avoided.

(g) Moldy materials that can be cleaned should be cleaned using a soap or detergent solution. Materials that cannot be cleaned should be removed from the building in sealed plastic bags. Plastic sheeting should be discarded after use. There are no special requirements for disposal of moldy materials.

(h) The work area and areas used by workers for egress should be HEPA-vacuumed and cleaned with a damp cloth and/or mop and a soap or detergent solution.

(i) All areas should be left dry and visibly free from mold, dust, and debris. Check that other quality assurance indicators (see *Quality Insurance Indicators*) have also been met.

**Large Areas** (greater than 100 square feet in a contiguous area) – e.g. on separate walls in a single room

Properly trained and equipped mold remediation workers should conduct the remediation. The presence of a trained building or environmental health professional (see *Environmental Assessment*) to provide oversight during remediation may be helpful to ensure quality work and compliance with the work plan. The following procedures are recommended:

(a) Personnel trained in the handling of mold-damaged materials equipped with:

- i. A minimum of half-face elastomeric respirators with P-100 filters used in accordance with the OSHA respiratory protection standard (29 CFR 1910.134)
- ii. Full body coveralls with head and foot coverings
- iii. Gloves and eye protection

(b) Containment of the affected area:

- i. The HVAC system servicing this area should be shut down during remediation.
- ii. Isolation of the work area using plastic sheeting sealed with duct tape. Furnishings should be removed from the area. Ventilation ducts/grills, any other openings, and remaining fixtures/furnishings should be covered with plastic sheeting sealed with duct tape.
- iii. Consider using an exhaust fan equipped with a HEPA filter to generate negative pressurization.
- iv. Consider using airlocks and a clean changing room.
- v. Egress pathways should also be covered if a clean changing room is not used.

(c) The work area should be unoccupied.

(d) Efforts should be made to reduce dust generation. Dust suppression methods particularly during any cutting or resurfacing of materials are highly recommended. Methods to consider include: cleaning or gently misting surfaces with a dilute soap or detergent solution prior to removal; the use of High-Efficiency Particulate Air (HEPA) vacuum-shrouded tools; or using a vacuum equipped with a HEPA filter at the point of dust generation. Work practices that create excessive dust should be avoided.

(e) Moldy materials, that can be cleaned, should be cleaned using a soap or detergent solution. Materials that cannot be cleaned should be removed from the building in sealed plastic bags. The outside of the bags should be cleaned with a damp cloth and a soap or detergent solution or HEPA-vacuumed in the work area (or clean changing room) prior to their transport to unaffected areas of the building. There are no special requirements for the disposal of moldy materials.



(f) Before leaving isolated areas, workers should remove disposable clothing to prevent the tracking of mold-containing dusts outside of the work area.

(g) The work area and egress pathways (and clean changing room if present) should be HEPA-vacuumed and cleaned with a damp cloth and/or mop with a soap or detergent solution and be visibly clean prior to the removal of isolation barriers. Plastic sheeting should be discarded after use.

(h) All areas should be left dry and visibly free from mold, dust, and debris. Check that other quality assurance indicators (see *Quality Insurance Indicators*) have also been met.

### **Remediation of HVAC Systems**

Mold growth in heating, ventilation, and air-conditioning (HVAC) systems can pose building-wide problems. Obtaining professional help should always be considered in addressing even small amounts of mold growth or moisture problems within an HVAC system. Recurring problems, regardless of size, may indicate a systemic problem and appropriate professional help should be sought.

**Small Isolated Area of Mold Growth in the HVAC System (<10 square feet) – e.g. box filter, small area on insulation**

(a) Remediation can be conducted by trained building maintenance staff that are familiar with the design and function of the impacted HVAC system. Such persons should receive training on proper cleaning methods, personal protection, and potential health hazards. This training can be performed as part of a program to comply with the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200).

(b) Respiratory protection (e.g. N-95 disposable respirator), in accordance with the OSHA respiratory protection standard (29 CFR 1910.134), is recommended. Gloves and eye protection should be worn.

(c) The HVAC system should be shut down prior to any remedial activities.

(d) Efforts should be made to reduce dust generation. Dust suppression methods particularly during any cutting or resurfacing of materials are highly recommended. Methods to consider include: cleaning or gently misting surfaces with a dilute soap or detergent solution prior to removal; the use of High-Efficiency Particulate Air (HEPA) vacuum-shrouded tools; or using a vacuum equipped with a HEPA filter at the point of dust generation. Work practices that create excessive dust should be avoided.

(e) The use of plastic sheeting to isolate other sections of the system should be considered.

(f) Moldy materials that can be cleaned should be cleaned using a soap or detergent solution. Growth-supporting materials that are moldy, such as the insulation of interior-lined ducts, flexible ducts, and filters, should be removed and sealed in plastic bags. There are no special requirements for the disposal of moldy materials.

(g) The work area and areas used for egress should be HEPA-vacuumed and cleaned with a damp cloth and/or mop and a soap or detergent solution. Any plastic sheeting should be discarded after use.

(h) All areas should be left dry and visibly free from mold, dust and debris. Check that other quality assurance indicators (see *Quality Insurance Indicators*) have also been met.

#### **Large Area of Mold Growth in the HVAC System (>10 square feet)**

Properly trained and equipped mold remediation workers with specific training and experience in HVAC systems, should conduct the remediation. The presence of a trained building or environmental health professional (see *Environmental Assessment*) with experience and specific knowledge of HVAC systems, to provide oversight during remediation can be helpful to ensure quality work and compliance with the work plan. The following procedures are recommended:

(a) Personnel trained in the handling of mold-damaged materials equipped with:

- i. A minimum of half-face elastomeric respirators with P-100 filters used in accordance with the OSHA respiratory protection standard (29 CFR 1910.134)
- ii. Full body coveralls with head and foot coverings
- iii. Gloves and eye protection

(b) The HVAC system should be shut down prior to any remedial activities.

(c) Containment of the affected area:

- i. Isolation of work area from the other areas of the HVAC system using plastic sheeting sealed with duct tape
- ii. The use of an exhaust fan equipped with a HEPA filter to generate negative pressurization should be considered
- iii. Consider using airlocks and a clean changing room
- iv. Egress pathways should also be covered if a clean changing room is not used

(d) Efforts should be made to reduce dust generation. Dust suppression methods particularly during any cutting or resurfacing of materials are highly recommended. Methods to consider include: cleaning or gently misting surfaces with a dilute soap or detergent solution prior to removal; the use of High-Efficiency Particulate Air (HEPA) vacuum-shrouded tools; or using a vacuum equipped with a HEPA filter at the point of dust generation. Work practices that

create excessive dust should be avoided.

(e) Moldy materials that can be cleaned should be cleaned using a soap or detergent solution. Growth-supporting materials that are moldy, such as the insulation of interior-lined ducts, flexible ducts, and filters, should be removed in sealed plastic bags. The outside of the bags should be cleaned with a damp cloth and a soap or detergent solution or HEPA-vacuumed prior to their removal from the isolated work area. There are no special requirements for the disposal of moldy materials.

(f) Before leaving isolated areas, workers should remove disposable clothing to prevent the tracking of mold-containing dust outside of the work area.

(g) The work area and egress pathways (and clean changing room if present) should be HEPA-vacuumed and cleaned with a damp cloth and/or mop and a soap or detergent solution prior to the removal of isolation barriers. Plastic sheeting should be discarded after use.

(h) All areas should be left dry and visibly free from mold, dust, and debris. Check that other quality assurance indicators (see *Quality Insurance Indicators*) have also been met.

## **Communication with Building Occupants**

Communication with occupants of affected spaces is important regardless of the size of the project but is especially important when mold growth requiring large-scale remediation is found. When large-scale remediation is performed, the building owner, management, and/or employer should notify occupants in the building. Notification should include a description of the remedial measures to be taken and a timetable for completion. Group meetings, held before and after remediation, with full disclosure of plans and results, can be an effective communication mechanism. Building occupants should be provided with a copy of all inspection reports upon request. For more detailed information on risk communication refer to the American Industrial Hygiene Association's publication, "Recognition, Evaluation, and Control of Indoor Mold."<sup>26</sup>

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## Appendix A

### Health Effects

Several comprehensive reviews of the scientific literature on the health effects of mold in indoor spaces have been published in recent years.<sup>1-3</sup> This appendix reflects these reviews but has also considered more recently published articles.

#### Potential for Exposure and Health Effects

Fungi are common in both indoor and outdoor environments and play a vital role in the earth's ecology by decomposing organic matter such as dead trees and leaves. As a result, all people have routine exposure to fungi, which may occur through inhalation, ingestion, and touching moldy surfaces. The main route of exposure to mold for people living or working in moldy indoor environments is inhalation of airborne fungal spores, fragments, or metabolites.<sup>2</sup> Ingestion and dermal exposures are less understood in these scenarios and can easily be minimized or prevented by workers through proper hygiene and work practices. Therefore, the remaining discussion will focus on the adverse health effects of mold due to inhalational exposure.

Adverse health effects may include: allergic reactions; toxic effects and irritation; and infections.<sup>1-5</sup> The mere presence of mold growth does not necessarily indicate that people present in the area will exhibit adverse health effects. However, as the amount of mold-impacted materials increases, so do potential exposures. Certain exposures may represent a significant risk such as occupational exposures to high concentrations of fungi and chronic (long-term) exposures, especially of individuals with underlying health conditions such as asthma, compromised immune systems, or allergies.

Evidence linking mold exposures to severe human health effects is documented in reports of occupational disease, particularly in forestry and agricultural settings where inhalation exposures were typically high and/or chronic.<sup>2,6-11</sup> The intensity of mold exposure and associated health effects experienced in undisturbed indoor environments is usually much less severe than that experienced by agricultural or forestry workers.<sup>2,7,12-14</sup> With the possible exception of exposures from mold remediation work, such high-level exposures are not expected indoors.<sup>15-16</sup> Although high-level exposures are unlikely to occur in undisturbed indoor settings, chronic exposures to lower levels may still raise health concerns.

Several factors influence the likelihood that individuals might experience health effects following exposure to mold in indoor environments. These include: the nature of the fungal material (e.g., allergenic, toxic/irritant, or infectious); the degree of exposure (amount and duration); and the susceptibility of exposed people. Susceptibility varies with genetic predisposition, age, state of health, concurrent exposures, and previous sensitization. It is not possible to determine "safe" or "unsafe" levels of exposure for the general public because of variation of individual susceptibility, lack of standardized and validated environmental exposure sampling methods, and lack of reliable biological markers.<sup>17</sup>

In addition to the adverse health effects associated with exposure to mold, in 2004, the Institute of Medicine (IOM) reported health risks associated with living in damp indoor environments. The IOM reported evidence suggesting an association between damp indoor environments and the development of asthma. Reported respiratory symptoms included, wheezing, coughing, and exacerbation of asthma.<sup>2</sup>

### Allergic and Hypersensitivity Effects

It is well established that fungi can cause allergic reactions in humans. The most common symptoms associated with allergic reactions include runny nose, sneezing, post-nasal drip with sore throat, eye irritation, cough, wheeze, and other symptoms associated with the aggravation of asthma.<sup>2,13,18-23</sup> Immunological responses to mold include allergic rhinitis, hypersensitivity pneumonitis, and asthma exacerbations. These conditions require prior exposure for sensitization. These symptoms may persist for some time after removal from the source.

Allergic rhinitis is a group of symptoms that mostly affects the mucous membranes of nasal passages and may result from an allergic reaction to fungi. Symptoms often associated with "hay fever" such as congestion, runny nose, and sneezing may occur.<sup>5,24</sup>

Hypersensitivity pneumonitis (HP) is a rare lung disease with delayed-onset (3-8 hours) of fever, shortness of breath, cough, chest tightness, chills, and general malaise. With continued exposure, HP can lead to permanent lung disease. The occurrence of HP, even among those that are highly exposed to fungi, is rare. HP has typically been associated with repeated heavy exposures in forestry and agricultural settings, which raises concerns for workers routinely performing mold remediation, but has also been reported in indoor settings with lower level chronic exposures.<sup>3,11,18,25-27</sup>

Allergic bronchopulmonary aspergillosis (ABPA) and allergic fungal sinusitis (AFS) are examples of rarely occurring allergic reactions to non-invasive fungal growth in the respiratory system. Most symptoms are non-specific resembling asthma or chronic sinusitis. In addition, ABPA and AFS usually occur in those with underlying medical problems. In the case of ABPA, this includes cystic fibrosis, asthma, and other predisposing medical conditions.<sup>28,29</sup>

Recent studies, which have suggested an association between the presence of indoor mold and the development of asthma or allergies, are limited and difficult to interpret. Stark *et al.* found higher concentrations of dust-borne mold in infants' homes were associated with development of allergic rhinitis, which is a known risk factor for childhood asthma.<sup>24</sup> However, other studies have shown higher concentrations of dust-borne fungi and other microorganisms in infants' homes were associated with a *decreased* risk for asthma and wheezing.<sup>30,31</sup> Jaakkola *et al.* reported an association between a moldy odor in the home and development of asthma, but no association with visible mold or water damage was found. Although the sample size for this subset was small, it suggests that active mold growth might be a stronger risk factor for certain health effects than presence of nonviable or inactive mold alone.<sup>32</sup> This also is supported by recent studies that have shown allergen production is significantly increased during active growth.<sup>33,34</sup>

Though available, allergy testing for molds is limited, subject to high rates of error, and can be difficult to interpret. Preparations for skin testing or the specific antigen in blood tests may be different from the mold to which an individual is sensitive. A positive test indicates an allergic response but does not definitively link a specific mold exposure to an individual's current health condition.<sup>5</sup>

## **Irritant and Toxic Effects**

### *Irritant Effects*

Indoor growth of mold can lead to the production of volatile organic compounds (VOCs), also referred to as microbial VOCs (MVOCs), and the presence of fungal glucans.<sup>13,35-38</sup> Glucans are components of many fungal cell walls. Some studies have reported an association with the inhalation of glucans and airway irritation and inflammation, but results have been mixed and may not be applicable to expected indoor concentrations. Observed effects may also be the result of exposure to or contact with other fungal components, metabolites, or synergistic effects with other microbial agents.<sup>17,36,39</sup> Resolution of irritant symptoms upon removal from the source can help distinguish irritant effects from allergic symptoms.<sup>5</sup>

MVOCs are responsible for the musty odor often associated with mold growth, which may be noticeable at very low concentrations. Many of the MVOCs are common to other sources in the home.<sup>40</sup> The very low levels usually found indoors have not been shown to cause health effects.<sup>35,37</sup>

### *Toxic Effects*

Some symptoms and maladies have been attributed to the toxic effects of fungi in indoor environments. Certain fungi can produce toxins (mycotoxins) at varying levels that are dependent on many complex environmental and biological factors.<sup>41</sup> The reported symptoms from exposure to mycotoxins indoors include headaches, irritation, and nausea/loss of appetite, but are often non-specific (e.g. fatigue, inability to concentrate/remember), and may be caused by other environmental and non-environmental agents.<sup>2,42-46</sup> Although health effects from exposures to mycotoxins have been associated with certain occupational exposures or ingestion of mold-contaminated food, scientific support for the reported effects in indoor environments has not been established. This may be due to the lower levels of exposure and different routes of exposure.<sup>2,5,13,21,27,46-49</sup>

*Stachybotrys* is colloquially referred to as "black mold" or "toxic mold." It has been suggested that toxins produced by this mold are associated with specific health effects. Acute Idiopathic Pulmonary Hemorrhage (AIPH) in infants has been described in several reports suggesting a relationship with *Stachybotrys*. AIPH is an uncommon condition that results in bleeding in the lungs. The IOM reviewed the existing studies and concluded that there was insufficient evidence to determine if mold exposure was associated with AIPH.<sup>2,3</sup> The evidence is also insufficient for an association between inhalation of *Stachybotrys* toxins indoors and neurological damage.<sup>2,26,49</sup> Although severe health effects from the inhalation exposures to



*Stachybotrys* toxins indoors is plausible, it is not well-supported, and the issue remains controversial.<sup>2,3,5,27,49,50</sup>

Organic dust toxic syndrome (ODTS) describes the abrupt onset of fever, flu-like symptoms, and respiratory symptoms in the hours following a single, heavy exposure to dust-containing fungi and other microorganisms. Unlike HP, ODTS does not require repeated exposures to bioaerosols and can occur after the first exposure. ODTS has been documented in farm workers handling contaminated material, but may also affect workers performing remediation of building materials with widespread mold growth.<sup>2,11,27</sup> ODTS is a self-limited illness, which usually improves within 24 hours after the discontinuation of exposure. It may be underreported among workers exposed to fungi, but would not be expected in occupants of buildings with mold growth.<sup>11,27</sup>

### Infectious Disease

Only a small number of fungi have been associated with infectious disease. Few of these fungi are typically found in the indoor environment.<sup>51,52</sup> Several species of *Aspergillus* are known to cause aspergillosis, most commonly *A. fumigatus*, *A. flavus*, and rarely, other species. Aspergillosis is a disease that generally affects severely immunosuppressed persons. Exposure to these molds, even in high concentrations, is unlikely to cause infection in healthy individuals.<sup>21,53</sup> Heavy exposure to fungi associated with bird and bat droppings (e.g. *Histoplasma capsulatum* and *Cryptococcus neoformans*) can lead to health effects, usually transient flu-like illnesses, in healthy individuals. More severe health effects are primarily encountered in immunocompromised persons.<sup>18,54</sup>

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## **Preventing and Cleaning Mold Growth Fact Sheet for Building Owners and Managers**

Mold (mildew) is a fungus that can grow inside building on wet or damp surfaces. Mold can cause allergic reactions, trigger asthma attacks, or cause other health problems in some people.

Mold needs water or moisture to grow. Stop indoor mold growth by fixing leaks, drying damp or wet areas and controlling humidity. Before a clean-up, refer to the complete "Mold Guidelines" at [nyc.gov/health](http://nyc.gov/health).

### **PREVENT MOLD GROWTH**

#### **Fix Water Problems Immediately**

- Correct water leaks.
- Dry any and all water-damaged items or areas.

#### **Control Moisture Sources**

- In bathrooms without windows, check that bathroom fans or exhaust vents are working.
- In bathrooms with windows, check that the window can be opened.
- Use a dehumidifier to lower humidity levels in basements.

### **CHECK THE SIZE OF THE AREA WITH MOLD GROWTH AND WATER DAMAGE**

- Look for hidden mold and water damage
- If the amount of mold observed covers a large area (more than 100 square feet), is in the HVAC system, or is difficult to get to, you may need professional help.
- If there is less than 100 square feet of mold growth, trained building staff should be able to do the cleanup job.

### **FOLLOW THE PROPER STEPS TO CLEAN MOLD GROWTH**

- Tell people living or working in the building about the plan to clean the mold growth.
- Tenants and others should leave the work area before cleaning begins.
- Cover or remove difficult-to-clean surfaces or items (e.g. carpeting, electronics) from the work area before cleaning begins.
- Use safety goggles, gloves, and a disposable respirator when removing mold growth.
- Clean mold growth with soap or a detergent, and water.
- Remove and throw away porous materials (e.g. ceiling tiles, insulation) with mold growth on them.
- Dispose of any plastic sheeting, moldy materials, and used sponges or rags in sealed heavy-duty plastic bags.
- Always fix water problems immediately. If the mold returns quickly or spreads, you may have an ongoing water problem.

#### **If more than 10 square feet of mold growth is present also:**

- Cover the floor in the work area with plastic sheeting.
- Cover entry and exit pathways with plastic sheeting.
- Seal any ventilation ducts with plastic sheeting.
- Mop and/or HEPA-vacuum the work area and pathways.

### **CLEAN MOLD GROWTH WITH PROPER SUPPLIES**

- Soap or detergent
- Disposable rags/sponges and scrub brush
- Buckets
- Heavy-duty plastic garbage bags
- Protective gear (e.g. goggles, rubber gloves, N95 respirator)

### **FOR MORE INFORMATION**

Visit our web site at [nyc.gov/health](http://nyc.gov/health) for the complete "Mold Guidelines" or call 311.

## **ATTACHMENT 3**

### **ARTCC MOLD REMEDIATION PROJECT CLEARANCE PROTOCOL**

# **Mold Remediation Project Clearance Protocol**

**Prepared for:**

**FEDERAL AVIATION ADMINISTRATION**

**Air Route Traffic Control Center  
(ARTCC)**

**Farmington, Minnesota**

April 20, 2012



### Baseline Sampling Methodology

Prior to any remediation work, a sample set will be collected in each of the rooms that will house an enclosure and one (1) comparison set from an outside ambient location. The samples will not be used for clearance determinations, but will indicate the air quality conditions prior to the remediation work.

Final clearance will be achieved via visual inspection, tape lift sampling (only when applicable), and comparison with the Post-Remediation Evaluation Criteria.

Post-Remediation Evaluation Criteria
1. <b>Visual Inspection</b> - The gypsum board, insulation, and all debris were removed to the limits specified and disposed of as contaminated waste. The space between the gypsum board and wall have been thoroughly cleaned and decontaminated. The entire enclosure is HEPA vacuumed and wet wiped to the point that the enclosure is "white glove" dust free.
2. <b>Total Spore Concentration</b> - Total spore concentration on work area samples are below 2,000 counts per cubic meter ( $\text{c}/\text{m}^3$ ) of air. If less than $800 \text{ c}/\text{m}^3$ , go to criterion 4.
3. <b>Comparison to Make-up Air Source</b> - Total spore concentration on work area samples are below the inside and the outside ambient comparison sample levels, whichever is greater.
4. <b>Rank / Order Comparison</b> - The level of each fungal type and hyphae recovered on the work area samples are less than $100 \text{ c}/\text{m}^3$ above the inside and the outside ambient comparison sample levels, whichever is greater.
5. <b>Indicator Organisms</b> - <i>Aspergillus/Penicillium</i> -like spores on the work area sample are below $200 \text{ c}/\text{m}^3$ .
6. <b>Target Organisms</b> - The work area sample recovered an absolute value of $\leq 40 \text{ c}/\text{m}^3$ of target fungal types ( <i>Stachybotrys</i> , <i>Fusarium</i> , <i>Trichoderma</i> , <i>Memnoniella</i> , and <i>Chaetomium</i> ).

### Air Clearance Sampling Methodology

Three sets of five consecutive samples will be collected inside the enclosure using a high volume air sampler and Air-O-Cell® cassettes. Sampling will be conducted at a flow rate of 15 liters per minute for a period of five minutes each, resulting in a collection volume of 75 liters of air. Environmental conditions may warrant the sample collection period to be reduced to one-minute intervals, in order to reduce the collection of non-microbial particulates that can mask the presence of mold spores.

Two sets of three consecutive samples will be collected outside the containment area, but inside the ARTCC in a non-complaint area, in the same manner as above. Sampling will be conducted at a flow rate of 15 liters per minute for a period of five minutes each, resulting in a collection volume of 75 liters of air.

One set of three consecutive samples will be collected outside of the building, in the same manner as above. Sampling will be conducted at a flow rate of 15 liters per minute for a period of 10 minutes each, resulting in a collection volume of 150 liters of air.

For all samples collected, the high volume air sampler will be calibrated before and after use.



All samples, one lab blank, and a completed Chain of Custody form will be sent to EMSL Analytical, Inc., by Federal Express Priority Overnight delivery. The samples will be mailed in a rigid container or box. There is no additional temperature handling requirement.

All samples will be clearly labeled. The sample identification number appearing on the cassette **must** match the identification number shown on the Chain of Custody form. The samples will be analyzed in accordance with **EMSL Method M001** (equivalent to the cassette manufacturer's recommended analytical procedure) via light microscopy at 600X magnification, with the entire slide (100% of the sample) being analyzed. The results will be reported as a total fungal spore count, in counts per cubic meter (counts/M<sup>3</sup>), which includes both viable and non-viable spores. All sample sets must pass the clearance criteria for acceptance.

#### Tape Lift Surface Sampling Methodology

After the floor trench cleaning has passed a thorough visual inspection, tape lift sampling will be performed. Three tape samples will be collected.

All samples and a completed Chain of Custody form will be sent to EMSL Analytical, Inc. by Federal Express Priority Overnight delivery. The samples will be mailed in a rigid container or box. There is no additional temperature handling requirement.

All samples will be clearly labeled. The sample identification number appearing on the tape **must** match the identification number shown on the Chain of Custody form. The samples will be analyzed in accordance with **EMSL Method M041**. The results will be reported as a total fungal spore count, which includes both viable and non-viable spores.

The area will be considered "clean" when the average spore count is below 100. Areas which average spore count exceeds 100 and/or contains the presence of fungal hyphae, mycelia, and other fungal structures shall be recleaned and retested.

#### Upon Clearance

Visual inspections, clearance air sampling, and tape lift sampling will be performed upon completion of the mold remediation, but prior to the re-installation of new building materials. Once the remediation area has passed the clearance criteria, the enclosure will be removed and the room will be available for restoration.

## **ATTACHMENT 4**

### **MICROSCOPIC EXAMINATION OF STICKY TAPE OR BULK SAMPLES FOR THE EVALUATION AND IDENTIFICATION OF FUNGI**

## **MICROSCOPIC EXAMINATION OF STICKY TAPE OR BULK SAMPLES FOR THE EVALUATION AND IDENTIFICATION OF FUNGI**

By Chin S. Yang, Ph.D.

### **INTRODUCTION**

During a building evaluation, signs of water damage or fungal growth often require laboratory confirmation and identification of causative fungi. A simple technique is to use a piece of clear sticky tape to pick up and remove suspect "fungal colony" for laboratory analysis. If no clear sticky tape is readily available, a piece of the material is removed for the purpose. A qualified, competent analyst trained in mycology and fungal identification can prepare and examine the sample for the presence of fungi, and identify the fungi. The results are qualitative and descriptive. However, the viability of identified fungi is unknown. Further tests are necessary to determine whether the identified fungi are viable or not.

This technical fact-sheet discusses various issues of using this technique during a building evaluation and investigation.

### **When and where to sample using the sticky tape method**

The sticky tape method is useful and appropriate when you observe or suspect fungal growth on such surfaces as drywall, wallpaper, or ceiling tiles and would like to confirm the fungal growth, identify the types of fungi there, require a quick turnaround, and do not need to know quantities and viability of fungi.

### **How to take sticky tape samples**

A detailed protocol is described in this fact-sheet (page 2). Please remember that this technique is for taking samples from smooth surfaces with signs of fungal growth. Do not sample from carpets or air duct liners. There are other sampling methods more appropriate for these materials. Do not sample from a desktop and expect the laboratory to give you spore counts.

### **What are the advantages of using the sticky tape method?**

The sticky tape method is easy to use. It is relatively easy to analyze by experienced mycologists. The turnaround is relatively quick if not too many samples are taken and submitted. The major advantage is that fungi are observed and identified whether they are dead or alive. There have been cases where extensive fungal growth was observed but culturing failed to detect any fungi.

### **What the results mean**

The following list is to assist you on result interpretation.

1. Bulk material and sticky tape samples taken for the direct evaluation of fungi and mold growth using optical microscopy provides qualitative assessment of fungal contamination and amplification. The most important assessment of this procedure is to determine whether fungi are colonizing, growing, and amplifying and to identify the fungi. Contamination is defined here as the types and/or numbers of fungal matter that are not normally there and should not be there. For example, *Stachybotrys*-like spores are normally not expected in a dry, clean indoor environment. Any detection of a *Stachybotrys*-like spore indicates contamination. On the other hand, *Cladosporium*-like spores are very common in any building; its mere detection does not suggest contamination. Amplification suggests fungal growth and reproductive increases in the fungal mass and number.
2. The results are qualitative and descriptive but do not indicate whether the observed fungal matter is viable, culturable or not.
3. The presence of a few loose fungal spores is considered as background, possibly spores in dust deposits.
4. The presence of spores and conidiophores suggests possible fungal contamination or growth, but spores and conidiophores can come from other sources or locations.
5. The presence of fungal hyphae, mycelia (aggregates of hyphae), and other fungal structures (such as rhizomorphs) suggests fungal colonization and growth (but not amplification because no spore is produced).
6. The presence of conidiophores (a spore-producing and -bearing structure), associated hyphae (vegetative fungal structures) and spores do suggest fungal growth and amplification.

7. The presence of spores does not necessarily indicate fungal amplification. The presence of an unusual number of spores of the same kind suggests fungal contamination from possible amplification sources nearby.
8. The degree of fungal growth and amplification is described as massive, numerous, many, a few and a trace. These descriptions are subjective and based on the analyst's experience and observation of the sample. Massive is used to describe a very heavy and dense concentration of fungal structures (whether spores, hyphae, or conidiophores, or any combination). Numerous describes heavy and dense concentrations of fungal matter, too numerous to count. Many is used to measure fungal matter that is heavy but countable. A few describe detectable and measurable fungal structures. A trace suggests that fungal matter and structures are barely detectable by an experience mycologist. It may be missed by less skilled analysts. No obvious fungal growth is clearly to describe no fungal growth observed, but loose background fungal spores and possibly hyphae may be observed. The following adjectives in decreasing sequence are used to describe various categories of growth: **Massive > Numerous > Many > A Few > A Trace > No Obvious Fungal Growth**.

#### Glossary:

1. Spores: a general term for a reproductive structure in fungi, bacteria, and cryptogamic plants. In fungi, spores may be sexual and asexual. Most indoor fungi are those producing asexual spores (or conidia), such as species of *Acremonium*, *Aspergillus*, *Alternaria*, *Penicillium*, *Stachybotrys*, *Ulocladium*, etc. Sexual spores are produced by Ascomycetes, Basidiomycetes, and Zygomycetes. Ascomycetes produce ascospores in asci. An ascus usually contains eight ascospores. Asci are often included in a fruiting body termed ascoma (an ascus-containing structure; pl. ascomata). Ascomycetes may be found growing indoors. Species of *Chaetomium*, *Eurotium*, and *Peziza* are frequently found on water-damaged paper or wood-products. Basidiomycetes produce basidiospores on a basidium. It usually has four basidiospores per basidium. A basidioma (pl. basidiomata) is a basidia-bearing fruiting structure. Several basidiomycetes may be identified indoors, particularly on wood structures indoors. Species of *Pleurotus*, *Sistotrema*, *Poria*, *Gloeophyllum*, *Serpula lacrymans*, *Coprinus*, etc. have been identified from badly water-damaged wood or paper-products in buildings. All these basidiomycetes are wood decay fungi. In most cases, basidiomycetes are identified from cultures or vegetative structures. Therefore, their true identities are often not known. Zygomycetes produce zygospores. Many zygomycetes are found indoors. They are: *Absidia*, *Choanephora*, *Cunninghamella*, *Mortierella*, *Mucor*, *Mycotypha*, *Rhizopus*, *Syncephalastrum*, etc. Zygomycetes often produce sporangia and sporangiospores. A few zygomycetes may produce conidia and conidiophores.

Because spores are propagules for dispersal, they are released individually or in clusters from a fungal colony. They may become airborne and then settle onto surfaces with dust. Therefore, any detection of loose fungal spores (unless some unusual spores, such as *Stachybotrys*-like, are detected) does not indicate fungal contamination. Only if fungal spores are attached to or associated with conidiophores and/or hyphae, then fungal contamination and growth are suggested.

2. Conidiophores: a modified hypha bearing or consisting of conidiogenous cells from which conidia are produced.
3. Hypha (pl. hyphae): a filamentous, vegetative structure of fungi. It is formed by a chain of fungal cells separated by septa. Some fungi produce modified hyphae that are characteristic to that fungal group. Clamped hyphae are characteristic of many basidiomycetes. Any observation of clamped hyphae suggests they are of a basidiomycete. Basidiomycetes may also produce modified hyphae, such as skeletal hyphae, binding hyphae, fiber hyphae, and skeletoid hyphae. The presence of these hyphae is indicative of basidiomycetes.
4. Mycelium (pl. mycelia): a mass of hyphae.
5. Rhizomorph: a root-like aggregation of hyphae. It provides functions similar to a root by absorbing and transporting water and nutrients. Basidiomycetes frequently produce rhizomorphs on and in substrates.
6. Pycnidium (pl. pycnidia): a more or less flask-shaped structure consisting of fungal tissues. Conidia and conidiophores are produced inside pycnidia. Species of *Phoma* produce their conidia inside pycnidia.

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### Protocol for Collecting Sticky Tape Samples for Fungal Assessment

Taking sticky tape samples for microscopic examination of fungal growth is a quick and easy technique if you have the tools listed below ready.

Obtain  $\frac{3}{4}$ " or  $\frac{1}{2}$ " wide clear sticky tape. The clear sticky tape may be found in a stationary store or in the stationary section of a large supermarket. If you have difficulty obtaining clear sticky tape, frosted tape, such as Scotch tape, is ok. **But never use clear packing tape or duct tape.** You also need labels or a marker pen to label your samples. Obtain some 1x3" microscope slides, aluminum foil or wax paper, and small slide boxes (clean plastic bags are acceptable).

Cut an approximately 3" long piece of tape and place sticky side of the tape onto the areas of suspected fungal growth. Gently press it to make good contact between the sticky surface and the "fungal growth." Remove the tape and observe to determine that the sticky surface of the tape has picked up some "fungal growth". Place it, sticky side down, on the glass slide or a piece of clean aluminum foil or waxed paper, folding the very end of the tape into a small tab or a handle. Mark your slide with a marker or a label. Put the slide in a slide box or a clean plastic bag. Repeat the process for additional samples. Make sure that you label and document each sample on your chain-of-custody sheet. Send a copy of the chain-of-custody with samples to the lab.

Sticky tape sampling is appropriate for smooth surfaces with visible signs of mold growth, such as drywall, wallpaper, ceiling tile, or wood. Do not use this sampling method on carpets or fibrous glass insulation. Bulk samples or vacuum dust samples can be collected from carpets or fibrous glass insulation for direct microscopic examination for fungi.

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General Decision Number: MN120034 08/03/2012 MN34

Superseded General Decision Number: MN20100068

State: Minnesota

Construction Type: Building

County: Dakota County in Minnesota.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Modification Number	Publication Date
0	01/06/2012
1	02/03/2012
2	04/06/2012
3	05/04/2012
4	06/01/2012
5	07/06/2012
6	08/03/2012

ASBE0034-009 06/04/2012

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR (Includes application of all insulating materials, protective coverings, coatings & finishes to all types of mechanical systems).....	\$ 41.17	18.59

BOIL0647-007 01/01/2012

	Rates	Fringes
BOILERMAKER.....	\$ 31.72	24.40

BRMN0001-049 05/01/2011

	Rates	Fringes
TILE SETTER.....	\$ 28.89	17.09

BRMN0008-013 05/01/2010

	Rates	Fringes
BRICKLAYER.....	\$ 33.30	14.74

CARP0087-015 05/01/2009

	Rates	Fringes
CARPENTER (Including Acoustical Installation, Drywall Hanging & Form Work).....	\$ 31.79	16.10

CARP0190-010 06/01/2009

	Rates	Fringes

LATHER.....\$ 33.04 14.87

ELEC0110-013 03/01/2009

	Rates	Fringes
ELECTRICIAN (Low Voltage, including wiring for Alarms)		
Installer.....\$ 21.68		10.48+a,b
Technician (Installation of Controller).....\$ 30.98		12.18+a,b

FOOTNOTES:

a. 1 year service - 5 days paid vacation; 2 years service - 10 days paid vacation; 5 years service - 12 days paid vacation; 7 years service - 14 days paid vacation; 9 years service - 16 days paid vacation; 11 years service - 18 days paid vacation; 12 years service - 20 days paid vacation

b. 8 Paid Holidays: New Year's Day; Memorial Day; 4th of July; Labor Day; Thanksgiving Day; Day after Thanksgiving; the normal work day preceding Christmas Day; & Christmas Day

ELEC0110-014 01/01/2011

	Rates	Fringes
ELECTRICIAN.....\$ 35.55		22.86

ELEV0009-002 01/01/2012

	Rates	Fringes
ELEVATOR MECHANIC.....\$ 43.21		23.535

FOOTNOTE:

PAID VACATION: Employer contributes 8% of regular hourly rate as vacation pay credit for employees with more than 5 years of service, and 6% for 6 months to 5 years of service.  
PAID HOLIDAYS: New Years Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, Friday after Thanksgiving, and Christmas Day.

ENGI0049-042 05/01/2012

	Rates	Fringes
OPERATOR: Power Equipment		
GROUP 1.....\$ 35.19		15.95
GROUP 2.....\$ 34.85		15.95
GROUP 3.....\$ 33.44		15.95
GROUP 4.....\$ 33.10		15.95
GROUP 5.....\$ 32.93		15.95
GROUP 6.....\$ 31.42		15.95
GROUP 7.....\$ 30.30		15.95
GROUP 8.....\$ 28.29		15.95

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Truck & Crawler Crane with 200' of Boom & Over, including Jib (\$.50 premium with 300' of Boom & over, including jib); & Tower Crane 250' & Over.

GROUP 2: Truck & Crawler Crane with 150' of Boom, up to but not including 200' of Boom, including Jib; & Tower Crane 200' & Over.

GROUP 3: Traveling Tower Crane; Truck & Crawler Crane, up to but not including 150' of Boom, including Jib; Tower Crane (Stationary) up to 200'; All-Terrain Vehicle Crane, Boom Truck over 100 ft, Dragline.

GROUP 4: Backhoe/Track/Trackhoe, Hoist (3 drums or more); Overhead Crane (inside building perimeter), Excavator.

GROUP 5: Asphalt Spreader, Bulldozer, Curb Machine, Drill, Forklift, Compressor 450 CFM or over (2 or more machines); Boom Truck up to 100 ft, Loader over 1 cu yd, Hoist (1 or 2 drums); Mechanic, Milling Machine, Roller, Scraper, Tractor over D2.

GROUP 6: Bobcat/Skid Loader, Loader up to 1 cu. yd., Tractor D2 or similar size.

GROUP 7: Compressor 600 CFM or over, Crane Oiler, Self Propelled Vibrating Packer.

GROUP 8: Oiler, Greaser (Tractor/Truck).

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IRON0512-002 05/01/2012

	Rates	Fringes
IRONWORKER, ORNAMENTAL, REINFORCING, AND STRUCTURAL.....	\$ 34.15	21.20

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LABO0132-006 03/04/2011

	Rates	Fringes
LABORER (ASBESTOS ABATEMENT) Removal from Floors, Walls & Ceilings.....	\$ 29.43	12.75

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LABO0132-023 05/01/2011

	Rates	Fringes
LABORER		
Group 1.....	\$ 30.06	13.33
Group 2.....	\$ 30.56	13.33

#### LABORERS CLASSIFICATIONS

GROUP 1 - Common or General Laborer, Asphalt Raker, Asphalt Shoveler, Carpenter Tender, Concrete Saw, Form Stripping, Mason Tender (Brick, Cement/Concrete), Plaster Tender, Scaffold Builder (Brick and Masonry), Top Person, Vibrating Plate

GROUP 2 - Pipelayer, Bottom Person

-----  
PAIN0061-007 05/01/2012

	Rates	Fringes
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## Drywall

Finisher/Taper.....	\$ 31.89	16.95
Sander.....	\$ 23.92	16.95

## PAINTER

Brush, Roller.....	\$ 30.89	17.76
Spray.....	\$ 31.64	17.76

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 PAIN1324-006 05/31/2010

	Rates	Fringes
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GLAZIER.....	\$ 35.75	12.85
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 PLAS0265-005 06/01/2011

	Rates	Fringes
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PLASTERER.....	\$ 28.94	19.58
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 PLAS0633-054 05/01/2012

	Rates	Fringes
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CEMENT MASON/CONCRETE FINISHER...	\$ 32.39	16.60
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 PLUM0034-011 06/01/2012

	Rates	Fringes
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PLUMBER (Excluding HVAC Pipe Installation).....	\$ 39.99	20.81
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## FOOTNOTE:

Paid Holiday: Labor Day

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 \* PLUM0417-003 06/01/2012

	Rates	Fringes
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SPRINKLER FITTER (Fire).....	\$ 39.68	20.85
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## FOOTNOTE:

 Paid Holidays: Memorial Day; July 4th; Friday before Labor  
Day; Labor Day; Columbus Day; & Thanksgiving Day

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 PLUM0455-012 05/01/2012

	Rates	Fringes
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PIPEFITTER.....	\$ 39.70	23.09
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 ROOF0096-022 05/01/2011

	Rates	Fringes
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ROOFER.....	\$ 34.14	14.60
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FOOTNOTE: Paid Holiday - Labor Day

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 SHEE0010-052 05/01/2009

	Rates	Fringes
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SHEET METAL WORKER (Including

HVAC Duct and System  
Installation).....\$ 38.46 18.34

FOOTNOTE: Paid Holiday: Labor Day

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SUMN2009-043 07/27/2009

	Rates	Fringes
INSTALLER - SIGN.....	\$ 20.32	5.05
LABORER: Landscape.....	\$ 12.88	4.61

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TEAM0346-005 05/01/2012

	Rates	Fringes
TRUCK DRIVER		
2-Axle Dump Truck.....	\$ 25.30	11.85
3-Axle Dump Truck.....	\$ 25.55	11.85

#### TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Boom Truck

GROUP 2: Ready Mix, Tractor Tractor

GROUP 3: Fork Lift, Mechanic, Tandem or 3 axle truck

GROUP 4: Dumpman, Farm Tractor, Single or 2 axle Truck

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WELDERS - Receive rate prescribed for craft performing  
operation to which welding is incidental.

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Unlisted classifications needed for work not included within  
the scope of the classifications listed may be added after  
award only as provided in the labor standards contract clauses  
(29CFR 5.5 (a) (1) (ii)).

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The body of each wage determination lists the classification  
and wage rates that have been found to be prevailing for the  
cited type(s) of construction in the area covered by the wage  
determination. The classifications are listed in alphabetical  
order of "identifiers" that indicate whether the particular  
rate is union or non-union.

#### Union Identifiers

An identifier enclosed in dotted lines beginning with  
characters other than "SU" denotes that the union  
classification and rate have found to be prevailing for that  
classification. Example: PLUM0198-005 07/01/2011. The  
first four letters , PLUM, indicate the international union and  
the four-digit number, 0198, that follows indicates the local  
union number or district council number where applicable ,  
i.e., Plumbers Local 0198. The next number, 005 in the

example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rate.

#### Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

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#### WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator

U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

WD 05-2287 (Rev.-12) was first posted on www.wdol.gov on 06/19/2012

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REGISTER OF WAGE DETERMINATIONS UNDER	U.S. DEPARTMENT OF LABOR
THE SERVICE CONTRACT ACT	EMPLOYMENT STANDARDS ADMINISTRATION
By direction of the Secretary of Labor	WAGE AND HOUR DIVISION
	WASHINGTON D.C. 20210

Diane C. Koplewski	Division of	Wage Determination No.: 2005-2287
Director	Wage Determinations	Revision No.: 12
		Date Of Revision: 06/13/2012

States: Minnesota, Wisconsin

Area: Minnesota Counties of Anoka, Carver, Chisago, Dakota, Hennepin, Isanti, Ramsey, Scott, Washington, Wright  
 Wisconsin Counties of Pierce, Polk, St Croix

**\*\*Fringe Benefits Required Follow the Occupational Listing\*\***

OCCUPATION CODE - TITLE	FOOTNOTE	RATE
01000 - Administrative Support And Clerical Occupations		
01011 - Accounting Clerk I		15.12
01012 - Accounting Clerk II		16.97
01013 - Accounting Clerk III		18.99
01020 - Administrative Assistant		22.97
01040 - Court Reporter		19.17
01051 - Data Entry Operator I		13.68
01052 - Data Entry Operator II		14.93
01060 - Dispatcher, Motor Vehicle		21.93
01070 - Document Preparation Clerk		15.07
01090 - Duplicating Machine Operator		15.07
01111 - General Clerk I		14.03
01112 - General Clerk II		15.31
01113 - General Clerk III		18.25
01120 - Housing Referral Assistant		22.38
01141 - Messenger Courier		13.62
01191 - Order Clerk I		16.23
01192 - Order Clerk II		17.72
01261 - Personnel Assistant (Employment) I		17.75
01262 - Personnel Assistant (Employment) II		19.86
01263 - Personnel Assistant (Employment) III		22.13
01270 - Production Control Clerk		22.34
01280 - Receptionist		15.24
01290 - Rental Clerk		16.80
01300 - Scheduler, Maintenance		17.95
01311 - Secretary I		17.95
01312 - Secretary II		20.09
01313 - Secretary III		22.38
01320 - Service Order Dispatcher		20.00
01410 - Supply Technician		22.97
01420 - Survey Worker		19.17
01531 - Travel Clerk I		14.01
01532 - Travel Clerk II		15.12
01533 - Travel Clerk III		16.22
01611 - Word Processor I		15.01
01612 - Word Processor II		16.85
01613 - Word Processor III		18.85
05000 - Automotive Service Occupations		
05005 - Automobile Body Repairer, Fiberglass		23.66
05010 - Automotive Electrician		20.79
05040 - Automotive Glass Installer		19.11
05070 - Automotive Worker		19.93
05110 - Mobile Equipment Servicer		17.51

05130 - Motor Equipment Metal Mechanic	21.60
05160 - Motor Equipment Metal Worker	19.93
05190 - Motor Vehicle Mechanic	21.70
05220 - Motor Vehicle Mechanic Helper	16.72
05250 - Motor Vehicle Upholstery Worker	18.51
05280 - Motor Vehicle Wrecker	19.93
05310 - Painter, Automotive	19.94
05340 - Radiator Repair Specialist	19.73
05370 - Tire Repairer	16.12
05400 - Transmission Repair Specialist	21.60
07000 - Food Preparation And Service Occupations	
07010 - Baker	13.80
07041 - Cook I	13.58
07042 - Cook II	14.78
07070 - Dishwasher	10.58
07130 - Food Service Worker	10.92
07210 - Meat Cutter	20.01
07260 - Waiter/Waitress	11.59
09000 - Furniture Maintenance And Repair Occupations	
09010 - Electrostatic Spray Painter	19.90
09040 - Furniture Handler	16.13
09080 - Furniture Refinisher	19.90
09090 - Furniture Refinisher Helper	18.07
09110 - Furniture Repairer, Minor	19.60
09130 - Upholsterer	19.90
11000 - General Services And Support Occupations	
11030 - Cleaner, Vehicles	11.56
11060 - Elevator Operator	15.31
11090 - Gardener	20.25
11122 - Housekeeping Aide	15.31
11150 - Janitor	15.31
11210 - Laborer, Grounds Maintenance	16.54
11240 - Maid or Houseman	11.37
11260 - Pruner	16.00
11270 - Tractor Operator	18.46
11330 - Trail Maintenance Worker	16.54
11360 - Window Cleaner	16.67
12000 - Health Occupations	
12010 - Ambulance Driver	18.62
12011 - Breath Alcohol Technician	19.34
12012 - Certified Occupational Therapist Assistant	19.52
12015 - Certified Physical Therapist Assistant	21.11
12020 - Dental Assistant	19.97
12025 - Dental Hygienist	33.77
12030 - EKG Technician	27.56
12035 - Electroneurodiagnostic Technologist	27.56
12040 - Emergency Medical Technician	18.62
12071 - Licensed Practical Nurse I	17.28
12072 - Licensed Practical Nurse II	19.34
12073 - Licensed Practical Nurse III	21.55
12100 - Medical Assistant	16.35
12130 - Medical Laboratory Technician	19.22
12160 - Medical Record Clerk	16.01
12190 - Medical Record Technician	17.91
12195 - Medical Transcriptionist	17.67
12210 - Nuclear Medicine Technologist	34.10
12221 - Nursing Assistant I	11.37
12222 - Nursing Assistant II	12.78
12223 - Nursing Assistant III	13.95
12224 - Nursing Assistant IV	15.79
12235 - Optical Dispenser	18.70
12236 - Optical Technician	16.04
12250 - Pharmacy Technician	15.53
12280 - Phlebotomist	15.79

12305 - Radiologic Technologist	27.30
12311 - Registered Nurse I	29.71
12312 - Registered Nurse II	36.35
12313 - Registered Nurse II, Specialist	36.35
12314 - Registered Nurse III	43.98
12315 - Registered Nurse III, Anesthetist	43.98
12316 - Registered Nurse IV	52.71
12317 - Scheduler (Drug and Alcohol Testing)	23.34
13000 - Information And Arts Occupations	
13011 - Exhibits Specialist I	20.47
13012 - Exhibits Specialist II	26.14
13013 - Exhibits Specialist III	30.90
13041 - Illustrator I	21.81
13042 - Illustrator II	27.01
13043 - Illustrator III	33.05
13047 - Librarian	33.12
13050 - Library Aide/Clerk	13.54
13054 - Library Information Technology Systems Administrator	25.74
13058 - Library Technician	18.54
13061 - Media Specialist I	18.14
13062 - Media Specialist II	19.95
13063 - Media Specialist III	22.00
13071 - Photographer I	18.66
13072 - Photographer II	20.87
13073 - Photographer III	25.85
13074 - Photographer IV	31.63
13075 - Photographer V	36.15
13110 - Video Teleconference Technician	19.84
14000 - Information Technology Occupations	
14041 - Computer Operator I	18.63
14042 - Computer Operator II	20.85
14043 - Computer Operator III	23.23
14044 - Computer Operator IV	25.81
14045 - Computer Operator V	28.59
14071 - Computer Programmer I	(see 1) 26.47
14072 - Computer Programmer II	(see 1)
14073 - Computer Programmer III	(see 1)
14074 - Computer Programmer IV	(see 1)
14101 - Computer Systems Analyst I	(see 1)
14102 - Computer Systems Analyst II	(see 1)
14103 - Computer Systems Analyst III	(see 1)
14150 - Peripheral Equipment Operator	18.63
14160 - Personal Computer Support Technician	25.81
15000 - Instructional Occupations	
15010 - Aircrew Training Devices Instructor (Non-Rated)	34.82
15020 - Aircrew Training Devices Instructor (Rated)	39.04
15030 - Air Crew Training Devices Instructor (Pilot)	42.83
15050 - Computer Based Training Specialist / Instructor	34.82
15060 - Educational Technologist	28.68
15070 - Flight Instructor (Pilot)	42.83
15080 - Graphic Artist	24.15
15090 - Technical Instructor	23.67
15095 - Technical Instructor/Course Developer	28.96
15110 - Test Proctor	19.57
15120 - Tutor	19.57
16000 - Laundry, Dry-Cleaning, Pressing And Related Occupations	
16010 - Assembler	11.42
16030 - Counter Attendant	11.42
16040 - Dry Cleaner	14.39
16070 - Finisher, Flatwork, Machine	11.42
16090 - Presser, Hand	11.42
16110 - Presser, Machine, Drycleaning	11.42
16130 - Presser, Machine, Shirts	11.42

16160 - Presser, Machine, Wearing Apparel, Laundry	11.42
16190 - Sewing Machine Operator	15.22
16220 - Tailor	16.09
16250 - Washer, Machine	12.66
19000 - Machine Tool Operation And Repair Occupations	
19010 - Machine-Tool Operator (Tool Room)	23.64
19040 - Tool And Die Maker	29.32
21000 - Materials Handling And Packing Occupations	
21020 - Forklift Operator	17.74
21030 - Material Coordinator	22.34
21040 - Material Expediter	22.34
21050 - Material Handling Laborer	16.04
21071 - Order Filler	15.92
21080 - Production Line Worker (Food Processing)	17.74
21110 - Shipping Packer	18.04
21130 - Shipping/Receiving Clerk	18.04
21140 - Store Worker I	14.40
21150 - Stock Clerk	18.61
21210 - Tools And Parts Attendant	17.74
21410 - Warehouse Specialist	18.67
23000 - Mechanics And Maintenance And Repair Occupations	
23010 - Aerospace Structural Welder	29.14
23021 - Aircraft Mechanic I	27.99
23022 - Aircraft Mechanic II	29.14
23023 - Aircraft Mechanic III	30.35
23040 - Aircraft Mechanic Helper	21.64
23050 - Aircraft, Painter	26.79
23060 - Aircraft Servicer	24.57
23080 - Aircraft Worker	25.65
23110 - Appliance Mechanic	23.16
23120 - Bicycle Repairer	17.12
23125 - Cable Splicer	31.75
23130 - Carpenter, Maintenance	24.26
23140 - Carpet Layer	26.15
23160 - Electrician, Maintenance	29.96
23181 - Electronics Technician Maintenance I	23.74
23182 - Electronics Technician Maintenance II	26.06
23183 - Electronics Technician Maintenance III	29.52
23260 - Fabric Worker	22.65
23290 - Fire Alarm System Mechanic	24.43
23310 - Fire Extinguisher Repairer	21.27
23311 - Fuel Distribution System Mechanic	24.62
23312 - Fuel Distribution System Operator	21.94
23370 - General Maintenance Worker	21.45
23380 - Ground Support Equipment Mechanic	27.99
23381 - Ground Support Equipment Servicer	25.65
23382 - Ground Support Equipment Worker	21.27
23391 - Gunsmith I	23.64
23392 - Gunsmith II	25.92
23393 - Gunsmith III	26.09
23410 - Heating, Ventilation And Air-Conditioning Mechanic	27.16
23411 - Heating, Ventilation And Air Contditioning Mechanic (Research Facility)	27.16
23430 - Heavy Equipment Mechanic	24.56
23440 - Heavy Equipment Operator	28.74
23460 - Instrument Mechanic	23.53
23465 - Laboratory/Shelter Mechanic	24.85
23470 - Laborer	13.69
23510 - Locksmith	22.19
23530 - Machinery Maintenance Mechanic	24.68
23550 - Machinist, Maintenance	21.98
23580 - Maintenance Trades Helper	16.19
23591 - Metrology Technician I	23.53



23592 - Metrology Technician II	24.50
23593 - Metrology Technician III	25.51
23640 - Millwright	26.97
23710 - Office Appliance Repairer	21.42
23760 - Painter, Maintenance	21.49
23790 - Pipefitter, Maintenance	32.15
23810 - Plumber, Maintenance	27.99
23820 - Pneudraulic Systems Mechanic	25.92
23850 - Rigger	25.38
23870 - Scale Mechanic	23.64
23890 - Sheet-Metal Worker, Maintenance	29.90
23910 - Small Engine Mechanic	23.36
23931 - Telecommunications Mechanic I	26.00
23932 - Telecommunications Mechanic II	27.07
23950 - Telephone Lineman	24.43
23960 - Welder, Combination, Maintenance	22.63
23965 - Well Driller	23.07
23970 - Woodcraft Worker	25.92
23980 - Woodworker	21.01
24000 - Personal Needs Occupations	
24570 - Child Care Attendant	13.15
24580 - Child Care Center Clerk	18.03
24610 - Chore Aide	11.26
24620 - Family Readiness And Support Services Coordinator	14.71
24630 - Homemaker	20.05
25000 - Plant And System Operations Occupations	
25010 - Boiler Tender	27.13
25040 - Sewage Plant Operator	22.17
25070 - Stationary Engineer	27.13
25190 - Ventilation Equipment Tender	20.79
25210 - Water Treatment Plant Operator	22.17
27000 - Protective Service Occupations	
27004 - Alarm Monitor	22.00
27007 - Baggage Inspector	14.94
27008 - Corrections Officer	20.73
27010 - Court Security Officer	21.99
27030 - Detection Dog Handler	18.37
27040 - Detention Officer	20.73
27070 - Firefighter	20.84
27101 - Guard I	14.94
27102 - Guard II	18.37
27131 - Police Officer I	27.66
27132 - Police Officer II	30.73
28000 - Recreation Occupations	
28041 - Carnival Equipment Operator	12.15
28042 - Carnival Equipment Repairer	12.21
28043 - Carnival Equipment Worker	9.93
28210 - Gate Attendant/Gate Tender	13.43
28310 - Lifeguard	11.28
28350 - Park Attendant (Aide)	15.03
28510 - Recreation Aide/Health Facility Attendant	10.59
28515 - Recreation Specialist	16.18
28630 - Sports Official	11.97
28690 - Swimming Pool Operator	19.47
29000 - Stevedoring/Longshoremen Occupational Services	
29010 - Blocker And Bracer	25.63
29020 - Hatch Tender	25.63
29030 - Line Handler	25.63
29041 - Stevedore I	24.75
29042 - Stevedore II	26.78
30000 - Technical Occupations	
30010 - Air Traffic Control Specialist, Center (HFO) (see 2)	37.91
30011 - Air Traffic Control Specialist, Station (HFO) (see 2)	26.13

30012 - Air Traffic Control Specialist, Terminal (HFO) (see 2)	28.78
30021 - Archeological Technician I	20.60
30022 - Archeological Technician II	23.05
30023 - Archeological Technician III	28.54
30030 - Cartographic Technician	29.12
30040 - Civil Engineering Technician	25.55
30061 - Drafter/CAD Operator I	20.60
30062 - Drafter/CAD Operator II	23.05
30063 - Drafter/CAD Operator III	25.69
30064 - Drafter/CAD Operator IV	31.62
30081 - Engineering Technician I	18.51
30082 - Engineering Technician II	21.39
30083 - Engineering Technician III	23.93
30084 - Engineering Technician IV	29.64
30085 - Engineering Technician V	31.93
30086 - Engineering Technician VI	39.73
30090 - Environmental Technician	22.39
30210 - Laboratory Technician	20.75
30240 - Mathematical Technician	23.33
30361 - Paralegal/Legal Assistant I	20.05
30362 - Paralegal/Legal Assistant II	24.83
30363 - Paralegal/Legal Assistant III	30.38
30364 - Paralegal/Legal Assistant IV	36.76
30390 - Photo-Optics Technician	29.64
30461 - Technical Writer I	25.29
30462 - Technical Writer II	30.95
30463 - Technical Writer III	37.39
30491 - Unexploded Ordnance (UXO) Technician I	24.09
30492 - Unexploded Ordnance (UXO) Technician II	29.15
30493 - Unexploded Ordnance (UXO) Technician III	34.93
30494 - Unexploded (UXO) Safety Escort	24.09
30495 - Unexploded (UXO) Sweep Personnel	24.09
30620 - Weather Observer, Combined Upper Air Or (see 2)	25.69
Surface Programs	
30621 - Weather Observer, Senior (see 2)	28.54
31000 - Transportation/Mobile Equipment Operation Occupations	
31020 - Bus Aide	13.23
31030 - Bus Driver	17.55
31043 - Driver Courier	16.94
31260 - Parking and Lot Attendant	10.53
31290 - Shuttle Bus Driver	18.14
31310 - Taxi Driver	12.19
31361 - Truckdriver, Light	18.14
31362 - Truckdriver, Medium	22.10
31363 - Truckdriver, Heavy	22.46
31364 - Truckdriver, Tractor-Trailer	22.43
99000 - Miscellaneous Occupations	
99030 - Cashier	10.11
99050 - Desk Clerk	10.62
99095 - Embalmer	30.75
99251 - Laboratory Animal Caretaker I	11.41
99252 - Laboratory Animal Caretaker II	12.22
99310 - Mortician	35.34
99410 - Pest Controller	19.77
99510 - Photofinishing Worker	17.97
99710 - Recycling Laborer	20.39
99711 - Recycling Specialist	23.70
99730 - Refuse Collector	18.73
99810 - Sales Clerk	12.21
99820 - School Crossing Guard	12.01
99830 - Survey Party Chief	29.97
99831 - Surveying Aide	19.91
99832 - Surveying Technician	22.89
99840 - Vending Machine Attendant	16.99

99841 - Vending Machine Repairer	19.47
99842 - Vending Machine Repairer Helper	16.99

ALL OCCUPATIONS LISTED ABOVE RECEIVE THE FOLLOWING BENEFITS:

HEALTH & WELFARE: \$3.71 per hour or \$148.40 per week or \$643.07 per month

VACATION: 2 weeks paid vacation after 1 year of service with a contractor or successor; 3 weeks after 5 years, and 4 weeks after 15 years. Length of service includes the whole span of continuous service with the present contractor or successor, wherever employed, and with the predecessor contractors in the performance of similar work at the same Federal facility. (Reg. 29 CFR 4.173)

HOLIDAYS: A minimum of ten paid holidays per year, New Year's Day, Martin Luther King Jr's Birthday, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day, and Christmas Day. (A contractor may substitute for any of the named holidays another day off with pay in accordance with a plan communicated to the employees involved.) (See 29 CFR 4174)

THE OCCUPATIONS WHICH HAVE NUMBERED FOOTNOTES IN PARENTHESES RECEIVE THE FOLLOWING:

1) COMPUTER EMPLOYEES: Under the SCA at section 8(b), this wage determination does not apply to any employee who individually qualifies as a bona fide executive, administrative, or professional employee as defined in 29 C.F.R. Part 541. Because most Computer System Analysts and Computer Programmers who are compensated at a rate not less than \$27.63 (or on a salary or fee basis at a rate not less than \$455 per week) an hour would likely qualify as exempt computer professionals, (29 C.F.R. 541.400) wage rates may not be listed on this wage determination for all occupations within those job families. In addition, because this wage determination may not list a wage rate for some or all occupations within those job families if the survey data indicates that the prevailing wage rate for the occupation equals or exceeds \$27.63 per hour conformances may be necessary for certain nonexempt employees. For example, if an individual employee is nonexempt but nevertheless performs duties within the scope of one of the Computer Systems Analyst or Computer Programmer occupations for which this wage determination does not specify an SCA wage rate, then the wage rate for that employee must be conformed in accordance with the conformance procedures described in the conformance note included on this wage determination.

Additionally, because job titles vary widely and change quickly in the computer industry, job titles are not determinative of the application of the computer professional exemption. Therefore, the exemption applies only to computer employees who satisfy the compensation requirements and whose primary duty consists of:

- (1) The application of systems analysis techniques and procedures, including consulting with users, to determine hardware, software or system functional specifications;
- (2) The design, development, documentation, analysis, creation, testing or modification of computer systems or programs, including prototypes, based on and related to user or system design specifications;
- (3) The design, documentation, testing, creation or modification of computer programs related to machine operating systems; or
- (4) A combination of the aforementioned duties, the performance of which requires the same level of skills. (29 C.F.R. 541.400).

2) AIR TRAFFIC CONTROLLERS AND WEATHER OBSERVERS - NIGHT PAY & SUNDAY PAY: If you work at night as part of a regular tour of duty, you will earn a night differential and receive an additional 10% of basic pay for any hours worked between 6pm and 6am.

If you are a full-time employed (40 hours a week) and Sunday is part of your regularly scheduled workweek, you are paid at your rate of basic pay plus a Sunday premium of 25% of your basic rate for each hour of Sunday work which is not overtime (i.e. occasional work on Sunday outside the normal tour of duty is considered overtime work).

**HAZARDOUS PAY DIFFERENTIAL:** An 8 percent differential is applicable to employees employed in a position that represents a high degree of hazard when working with or in close proximity to ordnance, explosives, and incendiary materials. This includes work such as screening, blending, dying, mixing, and pressing of sensitive ordnance, explosives, and pyrotechnic compositions such as lead azide, black powder and photoflash powder. All dry-house activities involving propellants or explosives.

Demilitarization, modification, renovation, demolition, and maintenance operations on sensitive ordnance, explosives and incendiary materials. All operations involving regrading and cleaning of artillery ranges.

A 4 percent differential is applicable to employees employed in a position that represents a low degree of hazard when working with, or in close proximity to ordnance, (or employees possibly adjacent to) explosives and incendiary materials which involves potential injury such as laceration of hands, face, or arms of the employee engaged in the operation, irritation of the skin, minor burns and the like; minimal damage to immediate or adjacent work area or equipment being used. All operations involving, unloading, storage, and hauling of ordnance, explosive, and incendiary ordnance material other than small arms ammunition. These differentials are only applicable to work that has been specifically designated by the agency for ordnance, explosives, and incendiary material differential pay.

**\*\* UNIFORM ALLOWANCE \*\***

If employees are required to wear uniforms in the performance of this contract (either by the terms of the Government contract, by the employer, by the state or local law, etc.), the cost of furnishing such uniforms and maintaining (by laundering or dry cleaning) such uniforms is an expense that may not be borne by an employee where such cost reduces the hourly rate below that required by the wage determination. The Department of Labor will accept payment in accordance with the following standards as compliance:

The contractor or subcontractor is required to furnish all employees with an adequate number of uniforms without cost or to reimburse employees for the actual cost of the uniforms. In addition, where uniform cleaning and maintenance is made the responsibility of the employee, all contractors and subcontractors subject to this wage determination shall (in the absence of a bona fide collective bargaining agreement providing for a different amount, or the furnishing of contrary affirmative proof as to the actual cost), reimburse all employees for such cleaning and maintenance at a rate of \$3.35 per week (or \$.67 cents per day). However, in those instances where the uniforms furnished are made of "wash and wear" materials, may be routinely washed and dried with other personal garments, and do not require any special treatment such as dry cleaning, daily washing, or commercial laundering in order to meet the cleanliness or appearance standards set by the terms of the Government contract, by the contractor, by law, or by the nature of the work, there is no requirement that employees be reimbursed for uniform maintenance costs.

The duties of employees under job titles listed are those described in the "Service Contract Act Directory of Occupations", Fifth Edition, April 2006, unless otherwise indicated. Copies of the Directory are available on the Internet. A links to the Directory may be found on the WHD home page at <http://www.dol.gov/esa/whd/> or through the Wage Determinations On-Line (WDOL) Web site at <http://wdol.gov/>.

REQUEST FOR AUTHORIZATION OF ADDITIONAL CLASSIFICATION AND WAGE RATE {Standard Form 1444 (SF 1444)}

Conformance Process:

<http://www.wdol.gov/wdol/scafiles/std/05-2287.txt?v=12>

9/10/2012

The contracting officer shall require that any class of service employee which is not listed herein and which is to be employed under the contract (i.e., the work to be performed is not performed by any classification listed in the wage determination), be classified by the contractor so as to provide a reasonable relationship (i.e., appropriate level of skill comparison) between such unlisted classifications and the classifications listed in the wage determination. Such conformed classes of employees shall be paid the monetary wages and furnished the fringe benefits as are determined. Such conforming process shall be initiated by the contractor prior to the performance of contract work by such unlisted class(es) of employees. The conformed classification, wage rate, and/or fringe benefits shall be retroactive to the commencement date of the contract. {See Section 4.6 (C)(vi)} When multiple wage determinations are included in a contract, a separate SF 1444 should be prepared for each wage determination to which a class(es) is to be conformed.

The process for preparing a conformance request is as follows:

- 1) When preparing the bid, the contractor identifies the need for a conformed occupation(s) and computes a proposed rate(s).
- 2) After contract award, the contractor prepares a written report listing in order proposed classification title(s), a Federal grade equivalency (FGE) for each proposed classification(s), job description(s), and rationale for proposed wage rate(s), including information regarding the agreement or disagreement of the authorized representative of the employees involved, or where there is no authorized representative, the employees themselves. This report should be submitted to the contracting officer no later than 30 days after such unlisted class(es) of employees performs any contract work.
- 3) The contracting officer reviews the proposed action and promptly submits a report of the action, together with the agency's recommendations and pertinent information including the position of the contractor and the employees, to the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, for review. (See section 4.6(b)(2) of Regulations 29 CFR Part 4).
- 4) Within 30 days of receipt, the Wage and Hour Division approves, modifies, or disapproves the action via transmittal to the agency contracting officer, or notifies the contracting officer that additional time will be required to process the request.
- 5) The contracting officer transmits the Wage and Hour decision to the contractor.
- 6) The contractor informs the affected employees.

Information required by the Regulations must be submitted on SF 1444 or bond paper.

When preparing a conformance request, the "Service Contract Act Directory of Occupations" (the Directory) should be used to compare job definitions to insure that duties requested are not performed by a classification already listed in the wage determination. Remember, it is not the job title, but the required tasks that determine whether a class is included in an established wage determination. Conformances may not be used to artificially split, combine, or subdivide classifications listed in the wage determination.

**DEPARTMENT OF TRANSPORTATION  
CONTRACTOR'S RELEASE**

**CONTRACTOR (Name and Address)**

**ENTER SUM OF TOTAL OF AMOUNTS PAID  
AND PAYABLE**

**CONTRACT NO.**

\$

Pursuant to the terms of the above numbered contract and in consideration of the sum stated above, which has been paid or is to be paid to the Contractor, or its assignees, the Contractor, upon payment of the said sum by the UNITED STATES OF AMERICA (hereinafter called the Government), does remise, release, and discharge the Government, its officers, agents, and employees, of and from all liabilities, obligations, claims, and demands whatsoever under or arising from the said contract, except:

1. Specified claims in stated amounts or in estimated amounts where the amounts are not susceptible of exact statement by the Contractor, as follows: (or state "None")

2. Claims, together with reasonable expenses incidental thereto, based upon the liabilities of the Contractor to third parties arising out of the performance of this contract, which are not known to the Contractor on the date of the execution of this release and of which the Contractor gives notice in writing to the Contracting Officer within the period specified in the said contract; and

3. Claims for reimbursement of costs (other than expenses of the Contractor by reason of his indemnification of the Government against patent liability) including reasonable expenses incidental thereto, incurred by the Contractor under any provisions of the said contract relating to patents.

The Contractor agrees, in connection with patent matters and with claims which are not released as set forth above, that it will comply with all provisions of the said contract, provisions of the said contract, including without limitation those provisions relating to notification to the Contracting Officer and relating to the defense or prosecution of litigation.

**IN WITNESSES WHEREOF**, this release has been executed this \_\_\_\_\_ day of \_\_\_\_\_, 19 \_\_\_\_.

**WITNESSES**

\_\_\_\_\_  
(Contractor)

\_\_\_\_\_  
BY

\_\_\_\_\_  
TITLE

**NOTE:** In the case of a corporation, witnesses are not required but the below statement must be completed.

I, \_\_\_\_\_, am the \_\_\_\_\_ secretary of the corporation named as Contractor in the foregoing release; that \_\_\_\_\_ who signed said release on behalf of the Contractor was then \_\_\_\_\_ of said corporation; release was duly signed for and in behalf of said corporation by authority of its governing body and is within the scope of its corporate powers.

\_\_\_\_\_  
Signature